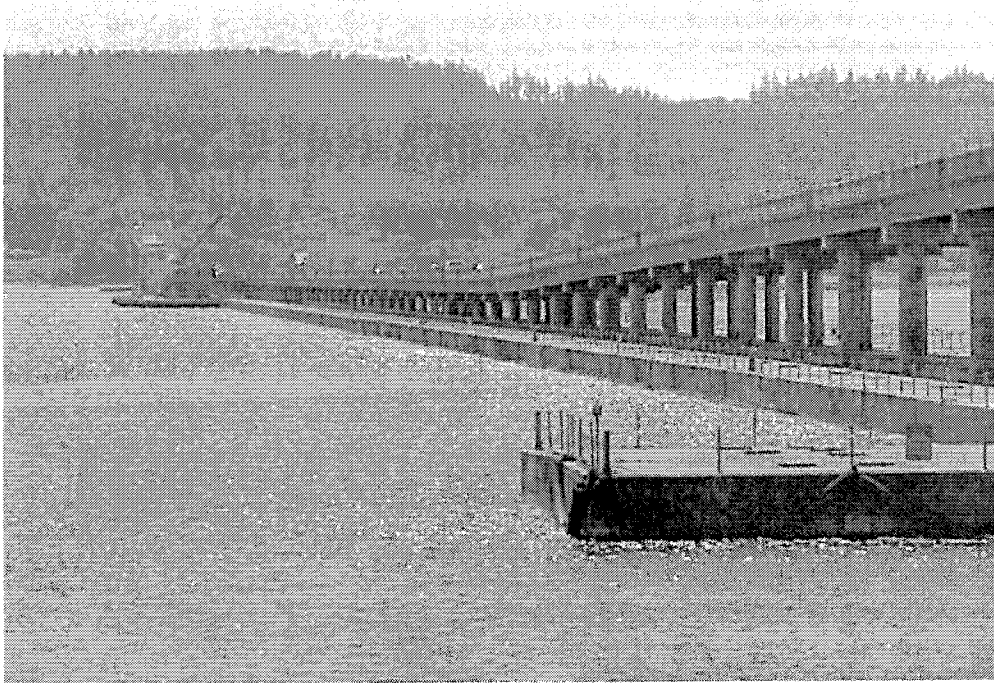


**State Route 104
Hood Canal Bridge
West Half Retrofit and East Half Replacement
Revised Environmental Assessment**



May 2002



**Washington State
Department of Transportation**



**U.S. Department of Transportation
Federal Highway Administration**

State Route 104 Hood Canal Bridge West Half Retrofit and East Half Replacement

Revised Environmental Assessment

May 2002



**Washington State
Department of Transportation
Olympic Region**



**U.S. Department of Transportation
Federal Highway Administration**



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Title VI

Notice to the Public

WSDOT hereby gives public notice that it is the policy of the department to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and related statutes and regulations in all programs and activities. Persons wishing information may call the Washington State Department of Transportation, Office of Equal Opportunity, at (360) 705-7095.

Federal Highway Administration

FINDING OF NO SIGNIFICANT IMPACT
for
HOOD CANAL BRIDGE
WEST HALF RETROFIT AND EAST HALF REPLACEMENT
JEFFERSON and KITSAP COUNTIES, WASHINGTON

Issued Pursuant to 42 U.S.C. 4332 (2)(c) and 23 U.S.C. 128 (a)

(This action complies with Executive Order 11988, Floodplain Management, Executive Order 11990, Protection of Wetlands, the Farmland Protection Act of 1981, the National Historic Preservation Act, and Executive Order 12898, Environmental Justice).

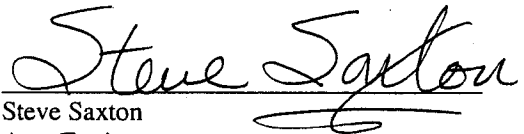
On March 7, 2002, the Federal Highway Administration (FHWA) approved an Environmental Assessment for the subject project. This project proposes to reconstruct the east half of the Hood Canal Bridge to current design standards and make improvements to the remainder of the structure. The bridge will be designed to current wind, wave and seismic standards. It will feature two 12-foot traffic lanes and 8-foot shoulders to improve safety and mobility. A new drawspan will dependably reestablish the 600-foot opening for large vessels that pass through the bridge.

The FHWA has determined that this proposal to retrofit the west half and replace the east half of the Hood Canal Bridge will have no significant impact on the human environment. This FONSI, based on the attached Environmental Assessment, is determined to be adequate and it accurately discusses the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures through independent review by FHWA. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope and content of the attached Environmental Assessment.

A biological assessment (BA) has been completed for this project in accordance with Section 7 of the Endangered Species Act (ESA). It has been submitted to the regulatory agencies for evaluation and consultation. FHWA and WSDOT have been actively coordinating with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) during the development of the Environmental Assessment and BA. Federal funding for right of way and construction will not be authorized until consultation under Section 7 of the ESA is completed between FHWA, NMFS, and USFWS. No irreversible or irretrievable impacts will occur, prior to authorization of the construction phase, for this project. Mandatory and discretionary conservation measures and conditions will be developed through consultation.

5-29-02

Date of Approval



Steve Saxton
Area Engineer
Federal Highway Administration

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*Federal Highway Administration
Region 10*

**State Route 104
Hood Canal Bridge
West Half Retrofit and East Half Replacement**

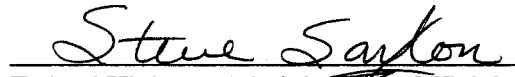
Jefferson and Kitsap Counties, Washington
Environmental Assessment

Submitted Pursuant to 42 U.S.C. 4332 (2)(c) by the
U.S. Department of Transportation
Federal Highway Administration
and
Washington State Department of Transportation

3/7/02
Date of Approval


Assistant Director, Environmental Services
Washington State Department of Transportation

3/7/02
Date of Approval


Federal Highway Administration Official

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This project proposes to reconstruct the east half of the Hood Canal Bridge to current design standards and make improvements to the remainder of the structure. Except for the bridge anchors, all new structures will be placed in the same location. The new and rehabilitated bridge will be constructed to withstand the most severe storm on record. It will feature two 12-foot traffic lanes and 8-foot shoulders to improve safety and mobility. Seismic retrofitting will allow the bridge to survive anticipated earthquakes. A new drawspan will dependably reestablish the 600-foot opening for large vessels that pass through the bridge.

Copies of this document are available at the above locations for a cost of \$10, which does not exceed the cost of reproduction and distribution.

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Abbreviations and Acronyms

ac	Acre
ADA	Americans With Disabilities Act
AGC	Associated General Contractors
AQMP	Air Quality Maintenance Plan
BA	Biological Assessment
BMP	Best Management Practices
CO	Carbon Monoxide
Corps	U.S. Army Corps of Engineers
Council	Advisory Council on Historic Preservation
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EDNA	Environmental Designation for Noise Abatement
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FHWA	Federal Highway Administration
FICWD	Federal Interagency Committee for Wetland Determination
ft	Foot or feet
HAER	Historic American Engineering Record
HCBRAC	Hood Canal Bridge Replacement Advisory Committee
HCBRSC	Hood Canal Replacement Stakeholders Committee
HOV	High Occupancy Vehicle
HPA	Hydraulic Permit Application
in	Inch
LEL	Lower Explosive Limit
LOS	Level of Service (a measure of traffic congestion)
MHHW	Mean Higher High Water
MIS	Major Investment Study
MLLW	Mean Lower Low Water
MOA	Memorandum of Agreement
MP	Milepost
MSL	Mean Sea Level
MTCA	Model Toxics Control Act
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO _x	Oxides of Nitrogen
NPDES	National Pollution Discharge Elimination System
NRCS	National Resource Conservation Service
OFM	Office of Financial Management
POF	Passenger Only Ferry
PRPTO	Peninsula Regional Planning Organization
PSAPCA	Puget Sound Air Pollution Control Agency
PSCAA	Puget Sound Clean Air Agency

Contents

PSRC	Puget Sound Regional Council
ROW	Right-Of-Way
RTP	Regional Transportation Plan
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan (Air Quality)
SOV	Single Occupant Vehicle
SPCC	Spill Prevention Control and Countermeasures Plan
sq ft	Square Feet
SR	State Route
SSASI	Salmon and Steelhead Stock Inventory
TDM	Transportation Demand Management
TESC	Temporary Erosion and Sediment Control Plan
TIP	Transportation Improvement Program
TPEAC	Transportation Permit Efficiency and Accountability Committee
TSM	Transportation System Management
TWLTL	Two Way Left Turn Lane
UFM	Unified Federal Methodology
UGA	Urban Growth Area
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington State Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation

Project Description

Background

History

Hood Canal is the most westerly arm of Puget Sound and an area of notable scenic beauty. Before Euro-American settlement and in the early pioneer days, boats provided most transportation. After the introduction of the automobile and roads, private ferries connected the Puget Sound Metropolitan Area and the Olympic Peninsula. In 1951 the State assumed responsibility for providing ferry service.

State ferry service was reliable, but slow. People who traveled in the region wanted a bridge. State highway engineers took on the challenge of designing a structure that could span a deep water body and withstand a severe marine environment. The result was a 1.5 mile long combination fixed and floating bridge on SR 104.

Its 6,530-foot long floating portion (of the 7,869 foot long structure) is still the longest floating bridge on saltwater in the world. Floating structures are connected to fixed concrete and steel approach spans. The west entrance of the bridge is located about 14 miles east of the junction of US Highway 101 and SR 104. The east entrance is located near the junction of SR 3/104.

The Hood Canal Bridge was opened to traffic on August 12, 1961. It was officially named the William A. Bugge Bridge on July 12, 1977 in honor of a prominent former Director of the State Department of Highways. On February 13, 1979, during a severe storm, the west half of the bridge sank. The structure succumbed to sustained winds of up to 85 mph and wind gusts estimated at 120 mph. It took three years to design and construct the replacement west half bridge.

During the reconstruction period temporary ferry service operated from South Point (Jefferson County) to Lofall (Kitsap County). This service provided some relief, but could not handle all the traffic demand. Residents had difficulty leaving the Olympic Peninsula and visitors had trouble getting across the Hood Canal.

Critical Bridge Functions

The Hood Canal Bridge provides the major transportation connection between the northeast Olympic Peninsula and Kitsap, King, Pierce, and Snohomish counties. Local residents travel back and forth across the bridge to commute to work, seek medical treatment, shop, and socialize. The bridge is also a main transportation artery for freight. SR 104 is designated as a Principal Arterial and is a component of the National Highway System. Figure 1 shows how the bridge serves as a vital transportation connection at this location.

The Hood Canal Bridge is 7,869 feet long and exists in a severe marine environment. It must withstand open sea waves, strong winds, tidal fluctuations of as much as 18.5 feet, and maximum tidal currents of 5 feet per second. The bridge provides a connection between the Olympic and Kitsap Peninsulas across a body of water that reaches 340 feet in depth. The boundary of Kitsap and Jefferson Counties runs down the center of Hood Canal.

Northeast Olympic Peninsula residents are the most dependent on the continued functioning of the Hood Canal Bridge. The following locations generate 92% of the weekday bridge traffic:

- Port Ludlow
- Port Townsend
- Sequim and Port Angeles
- East Jefferson County

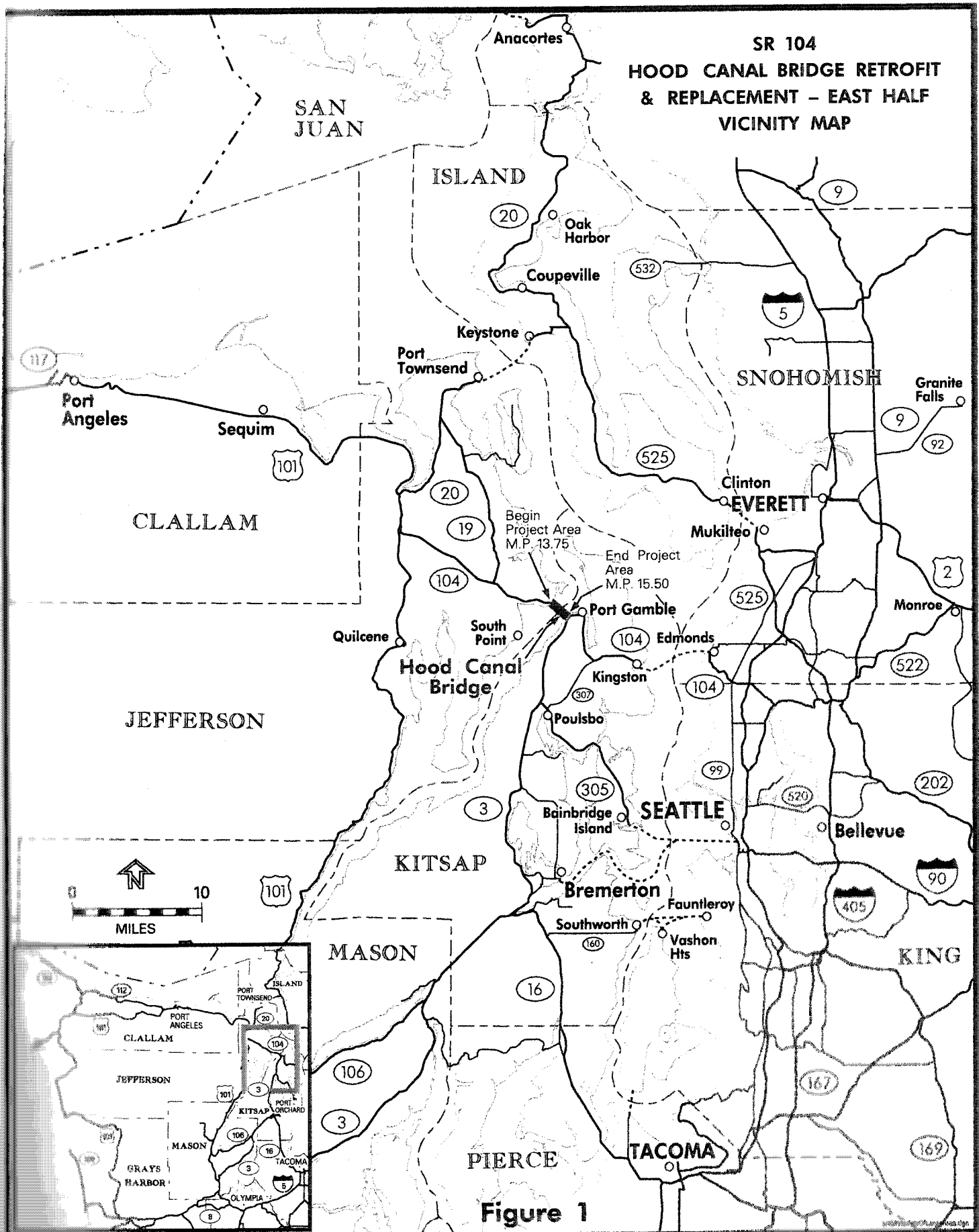
On September 16, 1998, the Washington State Department of Transportation (WSDOT) published the *Results of the 1998 Hood Canal Bridge Origin and Destination Survey*, prepared by the consultant ECO Northwest. This study analyzed traffic patterns of bridge users via a license plate survey and proposed mitigation strategies. About 60% of the vehicles crossing the bridge during the morning peak traffic went from the Olympic Peninsula to Kingston, Poulsbo, Bremerton, and Port Orchard. About 30% went to destinations in King and Snohomish Counties. The study calculated that a daily average of 14,915 vehicles cross the bridge on weekdays and 18,759 vehicles on weekends. About 47% of the weekday users are people commuting to work or traveling for business.

Population and traffic have increased significantly since the Hood Canal Bridge opened in 1961.

Table 1: Population Changes

Jurisdiction	1960 Population	2000 Population	Population Increase
Clallam County	30,022	66,700	122%
Jefferson County	9,369	26,800	186%
Kitsap County	84,176	230,200	173%
Washington State	2,853,214	5,803,400	103%

Northeast Olympic Peninsula is dependent on tourism as a source of employment. More than three million people visit Olympic National Park every year, mostly during the summer.



A dependable Hood Canal Bridge is a critical link in encouraging tourists with limited time to visit, and in transporting goods and services to and from the Puget Sound metropolitan area at a competitive price.

Existing Bridge

The western bridge terminus is located on SR 104 at milepost (MP) 13.93 and the eastern terminus is at MP 15.42. The existing bridge crossing is a hybrid of bridge types with a total length of 7,869 feet. Each end of the bridge enters Hood Canal on a standard fixed steel plate girder approach span. Each steel plate girder approach span connects to a steel truss transition span. The transition structure is fixed at the shoreward end and moves up and down with the tide and waves where they connect to the floating bridge.

Concrete pontoons provide most of the span across Hood Canal, reaching a total length of 6,530 feet. This is the floating portion of the bridge, which moves up and down with the tide. The pontoons are joined together to act as a single unit. A pontoon is basically a floating concrete box that supports the superstructure.

The east side pontoons were constructed in 1961. These pontoons have moderate structural strength. They have a limited compartment structure and are more vulnerable to flooding and sinking. The rebar was not coated with epoxy and severe corrosion has taken place, despite regular maintenance.

The west half concrete pontoons were constructed in special graving docks in 1980. The structural capacity of the west half pontoons provide three times the structural strength compared to the pontoons constructed in 1961. In addition, the west half pontoons were constructed with epoxy coated rebar and several watertight compartments. If one compartment were to leak, the remainder of the compartments would keep the pontoon afloat. The epoxy rebar is resistant to salt water corrosion.

Each pontoon is held in place by large concrete anchors sitting on the bottom of the canal, connected to the pontoons with steel anchor cables. These anchors are constructed of concrete with a weight range of 530 to 1,875 tons each. Each existing east half anchor covers 760 square feet of the Hood Canal floor with a rectangular shape measuring 40 feet by 19 feet. Each west half anchor covers 1,662 square feet with a 46-foot diameter circular shape. The net effect of coverage for both sets of anchors is the same because the east half anchors have a large amount of associated rock ballast. Anchors have been set from 800 to 2,000 feet away from each side of the bridge to minimize stresses from tides and storms.

Each anchor's weight and location were individually calculated to an exact setting. Each anchor holds a particular section of a pontoon to allow a limited range of motion that allows the bridge to function as a single unit. It is critical to equally spread tide and wind stress levels throughout all portions of the bridge. Figure 2 shows a cross-section of an existing west half pontoon

and associated superstructure. The new pontoons will have the same design, with a wider superstructure.

The superstructure was constructed on tall columns erected on the pontoons so that vehicles and roadway would not be damaged by storm waves and/or tidal action. (See cover photo, Figures 2 and 4).

CROSS-SECTION OF FLOATING STRUCTURE

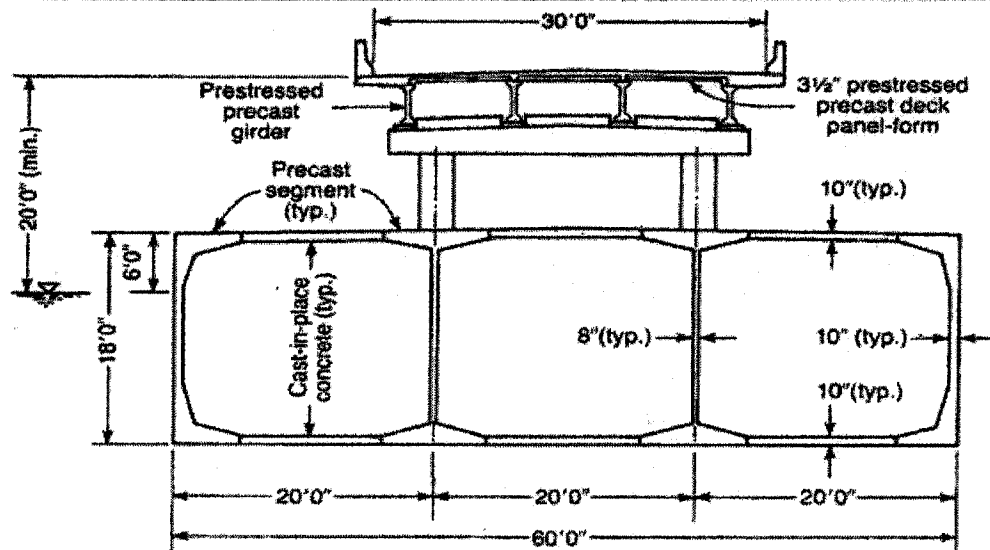


Figure 2: Existing West Side Pontoon and Superstructure Diagram

The Hood Canal Bridge features a split center drawspan. This part of the bridge moves horizontally and was originally designed to provide 600 feet of navigable opening width. This opening permits the unobstructed movement of small recreational and large ocean-going vessels into and out of Hood Canal. U.S. Navy ships, including Trident-Class submarines, are included in the list of vessels that frequently pass through the Hood Canal Bridge drawspan. The existing east drawspan has deteriorated and as a result the bridge can only be opened to 570 feet in width. This has been a navigation and safety issue for the passage of large ships. Both drawspans have control towers. The west drawspan tower houses the electronic control panels and the east tower is used for storage. Bridge details are listed in Tables 2 and 3.

Table 2: Hood Canal Bridge Facts	
Overall Bridge Length	7,869 feet (1.5 miles)
Steel transition truss spans	East half 280 feet West half 280 feet
Concrete approach spans	East half 639 feet West half 186 feet
Concrete floating pontoons	6,530 feet
Navigation opening	Designed for 600 feet when fully retracted
Depth of water below floating pontoon	80 to 340 feet
Tidal Range	18.5 feet (Maximum observed)

Table 3: Pontoon Design Comparison		
	1961 East Half Design	1982 West Half Design
Pontoon width	50 feet	60 feet
Pontoon height	14.3 feet	18 feet
Pontoon draft	9.2 feet	12 feet
Anchor cable diameter	1.75 inches	3 inches
Weight of submerged anchors	530 tons	685 to 1,875 tons

Proposed Action

WSDOT proposes to reconstruct the east half of the Hood Canal Bridge to current design standards and make numerous improvements to the remainder of the structure. Except for the bridge anchors, all new structures will be placed in the same location. See Figure 3 for details.

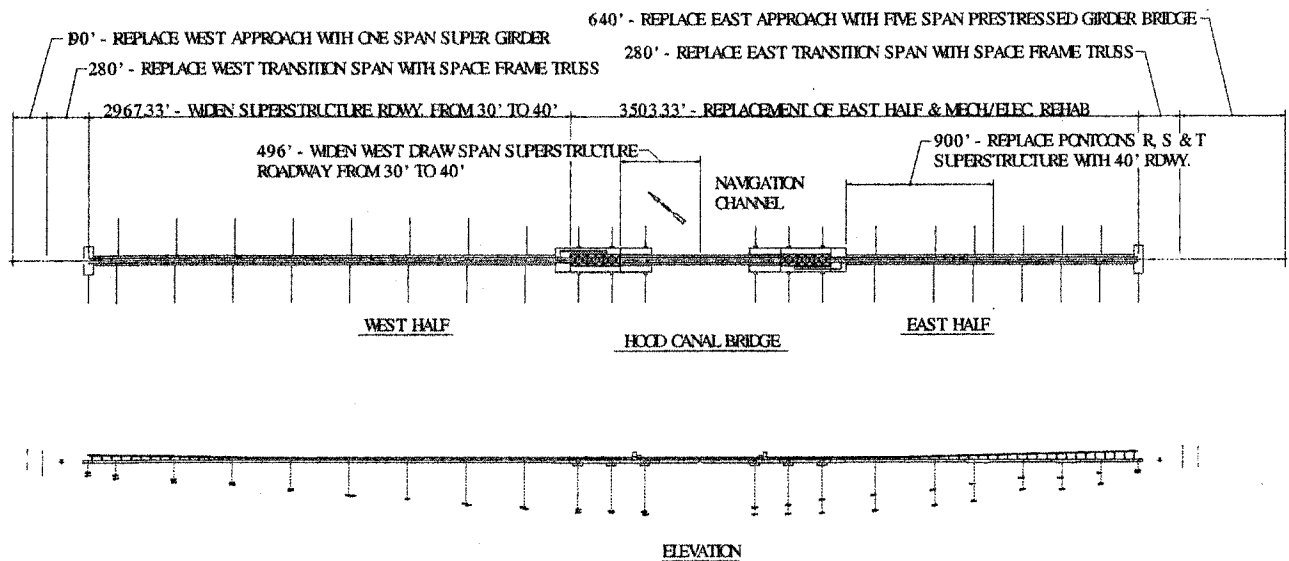


Figure 3: Bridge Replacement Plan

The new and rehabilitated portions of the bridge will be constructed to withstand the most severe storm on record. It will feature two 12-foot traffic lanes and 8-foot shoulders to improve safety and mobility for all bridge users. (The existing structure has two 11-foot lanes and 3-foot shoulders). The wider structure will also allow better access for emergency vehicles when accidents occur. Wider shoulders will enhance bicyclist safety. A new drawspan will provide a dependable opening for the large vessels that pass through the bridge, by reestablishing a 600-foot opening. The details of the proposed action are as follows.

- East Half Floating Structure** – The existing east half structures and pontoons will be removed. A new east half floating structure will be constructed on seventeen pontoons. Fourteen of these pontoons will be new and three existing pontoons will be moved from their existing location at Port Gamble Bay. The new structure will initially support two 12-foot lanes and 8-foot shoulders. However, the new and rehabilitated pontoons will have the capability of supporting 60 feet of roadway when and if needed in the future. The existing east half pontoons are not capable of supporting additional traffic lanes.

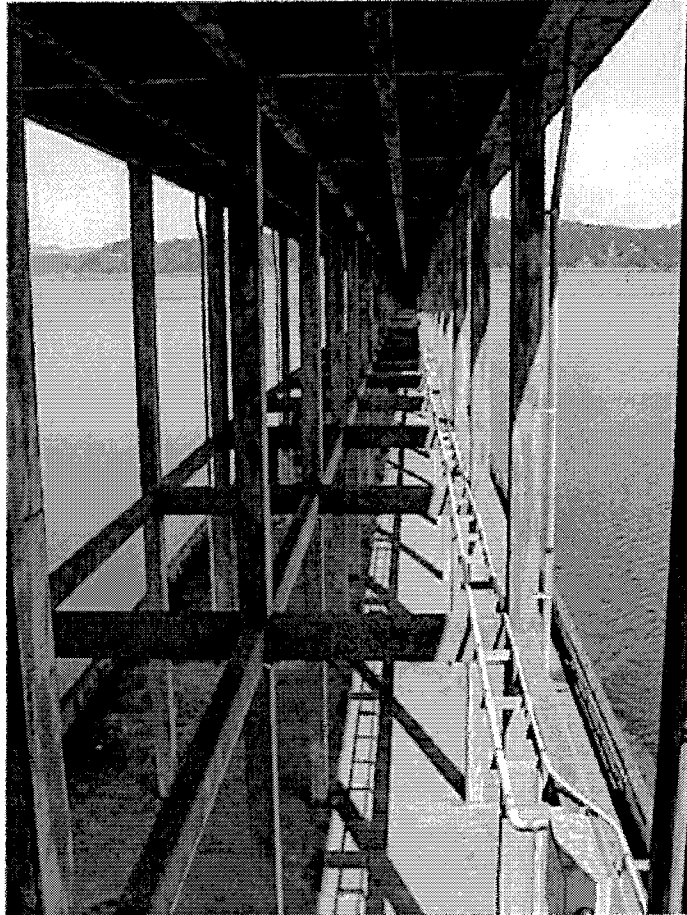


Figure 4: Existing East Pontoon and Superstructure

- **Floating Bridge Anchors** – Twenty new anchors and cables will be set to secure the new floating structure. Anchors will be laid on the bottom to hold the structure in place. Twenty old anchors will be left in place to avoid disturbing the marine environment. The old anchors could not be reused because of inadequate design strength and improper location. Old anchor cables will be used to temporarily stabilize the pontoons as they are moved into final position. When the pontoons are connected to the new cables and anchors, the old cables will be removed.
- **East and West Approach Spans** – Seven piers on spread footings support the existing east approach span, which is 639 feet long. The proposed east approach span will be 639 feet long and supported by six piers on drilled shaft foundations. Each pier will have a drilled shaft with a diameter of 10 feet surrounded by a steel casing to contain drilling spoils. Three piers on spread footings support the existing west approach span, which is 186 feet long. The proposed west approach span will be 186 feet long and supported by two piers

on drilled shaft foundations. Steel girders will be replaced with pre-cast concrete girders.



Figure 5: Existing East Side Approach and Transition Spans

- **Widening the West Half Superstructure** – The west half of the floating bridge superstructure will be widened on the existing pontoons to accommodate a wider roadway. There will be no increase in over-water cover from this component.
- **East and West Steel Truss Transition Spans** – These structures will be removed and replaced with wider structures to accommodate a future new 60-foot wide roadway. The vertical navigation channel under the trusses will be lowered by three feet. There will be no major impact to navigation.
- **West Drawspan** - The first floor of the drawspan tower will be expanded to accommodate a new larger generator. Also, the drawspan superstructure will be widened from 30 feet to 40 feet wide.
- **East Drawspan** - The drawspan, tower, superstructure, and machinery that moves the drawspan will be removed and replaced.

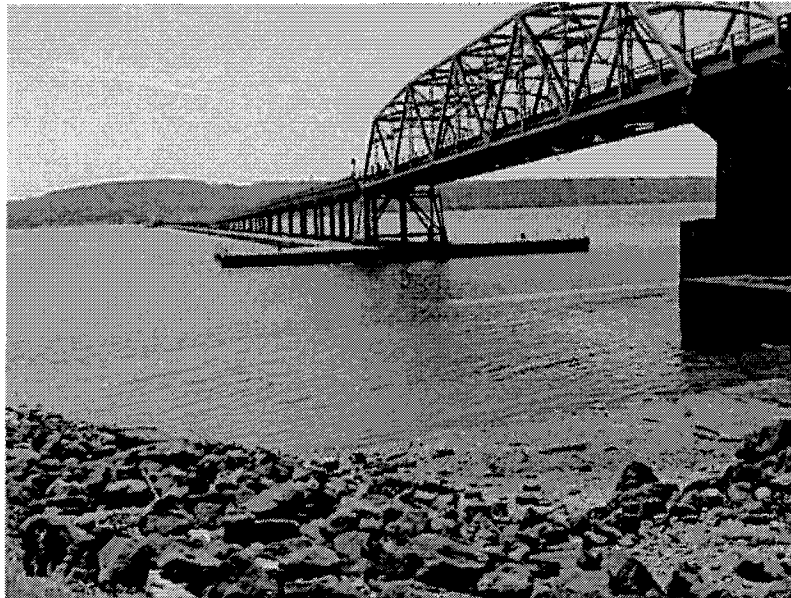


Figure 6: Existing West Side Transition Spans and Floating Structure

Despite the severe marine environment described above, the existing bridge location remains the best and only feasible site for crossing Hood Canal. Engineering and environmental considerations require that the new bridge components be replaced in the current location.

Proposed Traffic Mitigation Strategies

People who live on the Northeast Olympic Peninsula are very dependent on the continued functioning of the Hood Canal Bridge. The bridge provides a transportation lifeline for commercial, employment, medical, and social needs. Any break in service, without mitigation, would create severe hardship. Knowing this, WSDOT has planned this project to minimize the bridge closure period and provide alternate transportation when the bridge is not in service.

WSDOT is committed to limit the bridge closure period to a maximum of eight weeks between April and June 2006, and a minimum of six weeks is needed to construct the project. Several strategies to mitigate the traffic impacts of the six to eight week bridge closure were presented to WSDOT by planning groups and the public.

In deciding which mitigation strategies to adopt, WSDOT sought to balance compassion with efficiency and prudence. The total cost for bridge closure traffic mitigation is estimated at \$10,000,000. WSDOT has budgeted \$15,000,000 to accelerate the construction process during the bridge closure period. This amount will be spent to design and implement special construction methods to expedite placement of approach spans, pontoons, and superstructure. Normal construction methods would keep the bridge out of service from four to six months.

WSDOT is preparing to adopt a mitigation plan consisting of the six strategies listed in Table 4. Appendix E-1 provides a map showing where proposed temporary facilities will be located. The environmental consequences resulting from the mitigation strategies are discussed in the *Impacts* section.¹

The mitigation strategies will be able to handle much of the anticipated traffic. Passenger-only ferry service is anticipated to transport about 7,500 people every day. Almost half of the people (3,250) will travel during peak traffic hours.

Traffic on SR 101 is anticipated to increase substantially. The current average daily traffic (ADT) on SR 101 south of the bridge averages 2,600. WSDOT anticipates that ADT will average 10,000 cars and 2,000 trucks during the bridge closure. In addition, WSDOT anticipates providing 750 to 1,000 people with some type of assistance in obtaining medical transportation during the bridge closure.

¹ An exhaustive analysis of facilities required to provide bridge closure mitigation can be found in the document entitled *Hood Canal Bridge East-Half Replacement Closure Mitigation Plan – Preferred Options*, February 2000, WSDOT. Additional information is available in the unpublished document entitled *SR 104, Hood Canal Bridge West Half Retrofit and East Half Replacement Traffic Mitigation Analysis*, October 2001, Pacific International Engineering, PLLC and Sverdrup. The document also details potential environmental concerns of various elements of each mitigation option.

Table 4: Traffic Mitigation Strategies

Mitigation Strategy	Description
1	Provide passenger only foot ferry (POFF) service across Hood Canal between Port Gamble and South Point. Expand existing or build new park and ride lots. Provide appropriate shuttle bus service between the park and ride lots and ferry terminals. Property has been purchased at South Point and a lease is being negotiated at Port Gamble. A terminal at Lofall on the east side of Hood Canal has been tentatively rejected because of limited parking and disruptions to a residential area. Port Gamble appears to have fewer environmental issues. Hazardous materials liability must be addressed before WSDOT finalizes the lease at Port Gamble. Estimated cost \$6,500,000.
2	Enhance the US 101 corridor by improving existing pullouts and adding northbound and southbound passing lanes in the Mt. Walker vicinity. This project, since it has independent utility as a mobility project, will be covered in a separate environmental document. Estimated cost: \$2,000,000.
3	Implement a Hood Canal Bridge Closure Rideshare Program that would include ride matching and vanpools. Clallam and Jefferson Counties will be added to the existing Puget Sound Metropolitan Area rideshare database. WSDOT will coordinate with Clallam and Kitsap Transit to consider the feasibility and frequency of bus service. Private transit providers may supplement public transit for special medical situations. Estimated cost: \$250,000.
4	Provide enhanced transit services using both existing transit systems and private carriers for people with special medical needs. In addition, provide telemedicine services for routine medical care that cannot be rescheduled. Estimated cost: \$1,000,000.
5	Install signs at decision points to notify drivers of the Hood Canal Bridge closure and suggest alternative routes. Estimated cost will be included as standard construction activity.
6	Initiate a public outreach program to all users and communities affected by the bridge closure. Estimated cost will be included as standard construction activity.

South Point

South Point is located six miles south of the Hood Canal Bridge on the western shore of Hood Canal, and is the site of an old ferry landing. WSDOT recently purchased this property to use as the temporary western POF terminal during the bridge closure.

The two site configuration diagrams are shown in Appendices E 2 as North Alternative and E 3 as South Alternative. For both alternatives, a 150-foot long by 8-foot wide transfer span will connect the existing dock to a 30-foot by 90-foot barge or slightly smaller flexifloat. The barge or flexifloat will be attached to existing timber aprons secured by four 30-inch diameter steel pipe piles. Its seaward edge will be located in water at least 20 feet deep. Pedestrians will walk from the bus pullout across the dock and transfer span to access the POF. The preferred plan is E 2, which is the North Alternative.

The South Point POF terminal will have a small attendant's building, eight bus parking stalls, two passenger shelters, temporary toilet facilities, and floating dock. Stormwater treatment will be incorporated into the temporary facility construction plan.

Existing conditions at South Point will greatly simplify the development of a POF terminal in this location. Preliminary bathymetry data indicates that the original dredged area for the old ferry landing is still deep enough to use for the POF landing. The same study indicates that eelgrass has not colonized the area where the transfer span used to be, and eelgrass is not located close to the existing dolphins. Use of existing tower and dolphin structures will reduce the area of new over-water structures needed for the facility and reduce costs.

The POF terminal will also require rapid and efficient transit access, with space to stage, load and turn transit vehicles. The South Point site has large paved areas that are unused and well suited for development of the necessary transit facilities. Use of existing paving will also reduce permitting issues associated with creation of new impervious areas.

Shine Gravel Pit

A temporary park and ride lot with 800 to 1,200 stalls will be developed at the Shine Gravel Pit (Fred Hill Materials) to service South Point (Appendix E 4). SR 104 will provide access to the park and ride lot. Priority parking stalls for vanpools and carpools may be established. This site will be leased.

WSDOT will conduct further traffic analysis to determine the traffic impacts of operating this facility. It may be necessary to widen SR 104 at its intersection with the access road to the gravel pit for left turn channelization.

A temporary transit facility will also be developed at the gravel pit. It will be capable of servicing up to four standard (40-foot) buses in the boarding area. Each standard bus can seat 40 passengers and accommodate 20 additional standing passengers. Passenger waiting shelters, a 15-car passenger pick-up/drop-off, and an ADA parking area will also be provided.

Port Gamble

Port Gamble has been selected as the eastern POF terminal during the bridge closure. The temporary POF terminal and associated park and ride lot will be configured to avoid modifying any structures of the National Historic District. This property will be leased.

Passengers at Port Gamble's POF terminal will walk from the parking area and cross a 150-foot long by 8-foot wide walkway built on an existing trestle. (The trestle may be reinforced by sixteen 12-inch diameter open end steel piles). The walkway connects to a 10-foot square platform supported by four 18-inch diameter open end steel pipes. This connects to a 150-foot long by 8 foot wide transfer span to a 90-foot by 30-foot barge or a slightly smaller flexifloat. The POF will pick up passengers at the barge or flexifloat.

Two POF and park and ride facility configurations have been considered (see Appendices E 5 and E 6). Advantages of the North Alternative (E-5) over the South Alternative (E-6) configuration are:

- Better protection against tide, ship wake, wind and wave action.
- Less exposure to competing marine traffic.

An oil shed is located on the proposed POF site. This shed has the potential of releasing hazardous materials. The design of the park and ride lot will be configured to avoid accidental contact with the oil shed. All parking stalls will be located 30 feet or more away from the building. A fence will also be erected to keep people and errant vehicles outside the 30-foot perimeter.

Adjacent to the proposed POF terminal, a transit facility will be developed onshore capable of servicing up to four standard (40-foot) buses in the boarding area (see Appendix E-5). The park and ride facility will have 800 to 1,000 parking stalls. Priority parking stalls for vanpools and carpools may be established. In addition, special shuttles serving medical and employment centers in Kitsap County may service POF riders.

A 15-car capacity passenger pick-up/drop-off area will be provided for travelers not parking a car at the lot. Similar to South Point, Americans With Disabilities Act (ADA) parking, sheltered waiting areas, and toilet facilities will be provided. Improvements to the access road serving the site also will be made. Anticipated POF service will occur every 15-20 minutes at peak times and every 35 minutes during the off-peak.

Project Need and Purpose

Need for the Action

The Hood Canal Bridge has a number of structural problems associated with its location in a severe marine environment. There have been several major maintenance and repair attempts to stop pontoon cracking, beam spalling², and corrosion. In 1997 WSDOT conducted a comprehensive study that examined the condition of the bridge.

The results were published in the document titled *William A. Bugge Bridge (Hood Canal Bridge – 104/5.2) Replacement Plan for the East-Half Floating Portion, October 1997*. Bridge designers and inspectors found that the east half pontoons and anchor-cable system did not meet current design criteria. The east half drawspan had been jamming because of worn parts and could not be opened to the full design width.

Bridge inspectors concluded that the east half structure has been affected by much greater storm related forces than envisioned during the original design. These storms have caused mechanical and structural damage that has been repaired to the extent possible. Major storms have caused material fatigue and cracking, and have weakened key structural components. The bridge has reached the end of its effective service life. It remains in service contingent upon continuous maintenance and normal weather conditions.

The 1997 bridge study concluded: “The risk of critical damage due to major storms, in itself, is sufficient cause for the replacement of the east half.” A severe storm, such as the one in 1979, could cause critical damage to the east half pontoons. The type of critical damage that could occur would be dynamic loading³ from wind and waves that would exceed the functional structural capacity of the aging pontoons. In addition there could be movement of anchors on the channel bottom and water entering pontoons through cracks. These circumstances could result in a catastrophic sinking of the bridge.

The existing approach spans do not meet current design standards for structural strength necessary to withstand seismic forces (earthquakes).

The west half of the Hood Canal Bridge, although structurally sound, does not meet current design standards for lane and shoulder width. This situation, narrow lanes and shoulders, creates a safety hazard that is made worse by increasing volumes of traffic. In addition, when a vehicle breaks down on the bridge, there is not sufficient shoulder width for the vehicle to occupy, nor for emergency vehicles to access the site. As a result, the traffic lane is fully or

² Spalling is an engineering term to describe concrete that is breaking up into flakes, chips, or fragments.

³ Dynamic loading is an engineering term that relates to forces or stresses placed on a structure. In the case of the Hood Canal Bridge, these forces include wind, waves, tides, and currents.

partially blocked causing traffic to back up for considerable distances and creating significant traffic congestion.

The proposed project to reconstruct and rehabilitate the Hood Canal Bridge is needed to prevent a catastrophic sinking in a severe storm, such as occurred in 1979. It will also provide a wider and safer roadway that will meet design standards and better accommodate the continuing increase in traffic and vehicle breakdowns. The new approach structures will be designed to current seismic standards and be more earthquake resistant than the existing structures.

Project Purpose

The proposed project will preserve the critical transportation link between Puget Sound and the Olympic Peninsula. It would assure that the west and east half of the bridge have the same configuration that meet roadway, structural, and seismic design standards.

This project will enhance safety and mobility for motorists, bicyclists, pedestrians, as well as emergency vehicles. 600 feet of lateral clearance will be re-established for marine passage.

Major Project Issues

Threatened and Endangered Species/Marine Habitat. Federally listed marine-species could be affected by some construction activities. A Biological Assessment (BA) will be prepared to facilitate Section 7 consultation under the Endangered Species Act. This BA will evaluate marine and terrestrial species and habitat that may be affected by construction activities and subsequent operation of the bridge.

Socio-Economic and Transportation. WSDOT is planning that the Hood Canal Bridge will be completely closed from six to eight weeks. This is scheduled to occur between April and June 2006, when the east half pontoons and superstructure are removed and replaced.

The temporary bridge closure will affect how some people commute to work, socialize, shop, and access medical care. Tourism could decrease and freight delivery may be more expensive. The impact to traffic from the closure, as well as impacts from implementation of the bridge closure mitigation strategy, has been discussed in the impacts of the proposed action.

Minor Project Issues

Air Quality. Temporary impacts to air quality could result from construction activities and traffic mitigation strategies. Construction activities will temporarily cause an increase in dust and odor. The temporary increase in

carbon monoxide and nitrogen oxide from construction equipment operations will be noticed. Mitigation measures to control dust during construction are proposed.

Cultural Resources. The Washington State Historic Preservation Officer (SHPO) has determined that the floating portion of the entire bridge (both the east half and west half) is eligible for inclusion in the National Register of Historic Places. A determination of adverse effect has been made for the project on the floating portion of the bridge. WSDOT has coordinated with Federal Highway Administration (FHWA), SHPO, and the Advisory Council on Historic Preservation (Council) to develop appropriate mitigation measures for the adverse effect. A Memorandum of Agreement (MOA) has been developed and executed, which includes mitigation measures that will be implemented. A copy of this MOA is included in the appendices.

Hazardous Materials. Lead paint and other potentially hazardous materials may be exposed when removing the east half bridge transition spans and pontoons. Petroleum product spill protection will be necessary. A Spill Pollution Prevention Plan will be provided.

Lighting. The effects of illumination on fisheries and wildlife resources and surrounding residences during construction activities have been considered.

Noise. Temporary increases in noise from construction equipment will occur during some phases of construction.

Visual Quality. Visual quality impacts in terms of vividness, intactness, and unity have been considered during construction and operation.

Water Quality. Potential impacts to water resources in the vicinity of Hood Canal Bridge have been considered. Mitigation will focus on preventing construction water quality impacts to existing marine and fresh water resources.

Non-Issues

Title VI/Environmental Justice. No residential or commercial displacements will occur. No impacts on special population groups, as defined by Title VI and environmental justice regulations, will occur as a result of the proposed project.

Utilities. The utilities present on the bridge serve only the bridge itself. No utilities will be affected by construction activities. The east approach structure will have a temporary navigation light system set up so it will not be a navigational hazard. An underwater electrical transmission cable is located outside the work zone and will not be affected by the project.

Other Disciplines. There will be no impacts to **farmland, floodplains, land use, wild and scenic rivers, or wetlands.**

Alternatives to the Proposed Action

Alternative 1: No Build

No major construction or rehabilitation would occur. Bridge maintenance activities would continue until the bridge failed in a storm, or became unsafe through deterioration. Lane closures would occur because of increased maintenance requirements. As time passes, the existing structure is increasingly likely to fail from a catastrophic storm or deterioration.

Alternative 2: Replace and Retrofit At Existing Location – Proposed Action

This is the proposed project previously described in detail. The existing east half of the Hood Canal Bridge will be removed and replaced with larger and stronger pontoons, anchors, and anchor cables. New east half pontoons will be placed in the same location as the existing bridge. The west half of the bridge will be retrofitted.

Alternative Considered but Rejected: Rehabilitate Existing Bridge

This idea was investigated by the 1997 bridge study as a means of extending service life by 20 years. Rehabilitation would:

- Mitigate the effects of progressive deterioration to the maximum extent possible.
- Attempt to correct the mechanical and electrical problems causing poor reliability of the draw span operations.
- Improve anchor-system capacities.

Improvements would include improving the strength of pontoons by crack sealing, bolting connections, and deck rehabilitation. The superstructure would be strengthened by the use of improved rails, expansion joints, roadway deck overlay, and girder beam upgrades. The east drawspan would have an electrical and mechanical overhaul.

These improvements were estimated to cost \$64,150,000 in 1997. The rehabilitation proposal had two fatal flaws that ruled it out from further consideration.

1. The east-half of the bridge would still be subject to sinking in certain types of severe storms.
2. The east-half pontoons do not have the carrying capacity to provide for an expanded roadway needed for safety.

A continuation of deterioration raises concerns regarding the structural capacity of this bridge, even with extensive rehabilitation and maintenance. Rehabilitation of the east half of the bridge would not resolve the basic risks of a sudden unplanned storm related sinking, such as occurred in 1979.

Except for improvements to anchor-cable system capacities, rehabilitation would **not** significantly reduce the risk of storm damage

Permits and Documentation

This Environmental Assessment (EA) is being prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), 42 USC 4332(2)(C). The EA process is scheduled to be completed in May 2002.

This NEPA EA will subsequently be adopted to meet the requirements of the State Environmental Policy Act (SEPA).

The following permits are anticipated to be required before construction can begin:

Table 5: Anticipated Permits and Concurrences

Permit	Agency
Concurrence Consultation for Biological Assessment (Section 7)	U.S. Fish and Wildlife Service and National Marine Fisheries Service
Essential Fish Habitat (EFH) Consultation	National Marine Fisheries Service
Section 10 and 404 Permits	Corps of Engineers
Section 9 Bridge Permit	US Coast Guard
Section 401 Water Quality Certification	WA State Department of Ecology
NPDES Stormwater Permit for Construction Activities	WA State Department of Ecology
Coastal Zone Management Consistency Determination	WA State Department of Ecology
Hydraulic Project Approval	WA State Department of Fish & Wildlife
Shoreline Substantial Development Permit	WA State Department of Ecology, Jefferson and Kitsap Counties
Aquatic Use Permit	Department of Natural Resources

The Washington State Legislature passed the Engrossed Senate Bill (ESB) 6188 entitled the Permit Streamlining Act in 2001. The Transportation and Accountability Committee has selected the Hood Canal Bridge project as a pilot project under this new law. Construction of the proposed project is scheduled to start in June 2003 and be completed by January 2007.

Related Projects

SR 104 NEPA Pilot Project

WSDOT is planning to prepare an Environmental Impact Statement (EIS) to analyze proposed transportation improvements for the SR 104 corridor from its junction with US Highway 101 to the Kingston ferry terminal. The goal of the EIS is to develop a program of projects to satisfy the transportation needs of the corridor resulting from population growth and increased traffic along the corridor. This EIS will result in a Record of Decision that addresses mode and alignment, and it is likely that improvements developed there under will require separate project-level NEPA environmental review and documentation.

The project is one of three national pilot projects chosen by WSDOT and the Federal Highway Administration (FHWA) to test a new process to streamline the environmental review and approval of transportation projects by state and federal resource agencies.

Affected communities and resource agencies are actively participating in this planning-stage EIS. The transportation improvements identified by the EIS will be implemented as needed and as funding is available over the next 20 to 25 years.

Mt. Walker Passing Lanes

US 101 is experiencing increasing traffic growth and congestion between the junctions of SR 20 and SR 106. WSDOT proposes to improve existing pullouts and add northbound and southbound passing lanes in the Mt. Walker vicinity. The goal is to have this project completed before 2006 to mitigate the effects of the planned bridge closure. This project will be covered in a separate environmental document because it has independent utility as a mobility project.

Consistency With Bridge Condition Study Requirements

The sinking of the west half of the bridge in 1979 prompted concern about the condition of the surviving east half structure. In 1982, an expert panel of consulting engineers completed a study for WSDOT. The engineers evaluated the condition of the bridge and what repairs would be needed to keep the structure in satisfactory condition for the next 25 years. All major study recommendations were accomplished during the 1980's for approximately \$5,000,000. The 1982 study did not address structural capacity.

The east half drawspan began to jam in the mid-1990's. The mechanical equipment and electrical components had begun to corrode. Subsequent repairs made the drawspan temporarily operate more efficiently. But the problems soon recurred. A long-term fix would require the removal of the pontoon supporting the drawspan and replacement of all major mechanical and electrical components – estimated to cost \$15,000,000 to \$20,000,000 in 1997. This deficiency was a major consideration in determining the timing for replacement of the east half of the floating bridge.

WSDOT performed a comprehensive bridge condition study in 1997 that reviewed various maintenance strategies. The purpose of the study was to identify the factors affecting the remaining effective service life and to evaluate the cost effectiveness of rehabilitation versus replacement. The WSDOT Bridge and Structures Office published the results of the study in the report titled *William A. Bugge Bridge (Hood Canal Bridge – 104/5/2) Replacement Plan for the East-Half Floating Portion, October, 1997*.

Primary considerations affecting the decision of when to replace the east-half floating bridge were identified:

1. Bridge condition (deterioration)
2. Drawspan operation (reliability)
3. Risk of major storm damage (structural capacity).

The 1997 study found that the structural capacity of the east-half pontoons and anchor-cable system did not meet current design criteria. Prior concrete restoration - including post-tensioning, anchor strengthening and cable replacement – provided remedial actions to control corrosion and further deterioration.

Inspectors found that the structure has been subjected to much greater storm related forces than envisioned during the original design. These storms have caused mechanical and structural damage that required repair. The extent of cracking and damage caused by past major storms has reduced the fatigue life of the bridge.

The report determined that the effects of cumulative and accelerating deterioration raised concerns regarding the structural capacity of this bridge, even with extensive rehabilitation and maintenance. It concluded, "...the risk of critical damage due to major storms, in itself, is sufficient cause for replacement of the east-half".

Bridge inspections in the mid-1990's showed no measurable accumulation of water in the pontoons. However, corrosion related deterioration was quite widespread and included delamination⁴ and spalling of the reinforced concrete pontoons, columns, beams and the roadway deck underside.

⁴ Delamination is a construction term that means to split into thin layers.

Underwater inspections of the pontoons did not focus on concrete delamination or reinforcing steel corrosion due to extensive marine growth. (Marine growth is so heavy that three inches of pontoon freeboard has been lost).

Since 1997, despite continuous maintenance, deterioration of the bridge has continued to increase. The concrete superstructure has continued to deteriorate at an accelerated pace. Maintenance staff assigned to the Hood Canal Bridge believe that a storm anywhere near the magnitude of the 1979 storm would cause the bridge to fail, or leave the bridge with damage severe enough to place it out of service.

Staging, Construction Methods, and Dismantling Existing Structures

Staging

Replacing and retrofitting the Hood Canal Bridge provides both engineering and scheduling challenges.

The proposed project will require a mix of construction methods. Parts of the existing bridge will be used as a basis for the new structure. Some demolition will occur at the same time other parts of the structure are enhanced.

Construction activities on more than one project stage will occur concurrently. Organization of construction events is critical to successful project delivery with a minimum of public inconvenience and environmental impact.

Construction of the project will be spread out over four construction seasons running from June 2003 to January 2007. The bridge will be closed for an estimated six to eight weeks within the timeframe of April to June 2006, when the east pontoons and superstructure are removed and replaced. Two extended weekend closures (Saturday, Sunday, and Monday) will also occur to replace the east and west approach structures.

Construction activities are limited by weather and fish protection considerations. If the contractor were to use a graving dock in the Port of Tacoma area, in-water work would be prohibited from February 15 to August 15th.

In-water work restrictions will be placed on work in the Hood Canal from January 15th through July 14th. During this period the contractor may place anchors, float in pontoons, and drill within a shaft. The contractor may not remove approach span pilings or install new ones.

Construction Work Restriction Periods

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Hood Canal (Fish Window)												
Severe Storms (Restricted Work)												

Project Construction Stages

Stage 1 – June 2003 through October 2005

- Begin offsite fabrication of major structural elements:
 - Pontoon
 - Gravity anchors and anchor cables
 - Steel trusses and A-frames
 - Prestressed girders
 - Draw span control systems.

Stage 2 – July 2003 through September 2003

- Construct work trestle at the east approach span.
- Construct new columns on pontoons and crossbeam extensions on west half of the bridge.
- Shift traffic to the north on the west pontoons and draw spans.
- Remove concrete barrier on south side.

Stage 3 – September 2003 through November 2004

- Construct east and west approach permanent substructure (shafts, columns, and crossbeams).
- Construct east and west approach temporary crossbeams and columns. These temporary structures are required to roll existing approach structures off the permanent approach piers. This will make room for the new structures.
- Construct south side superstructure widening on the west half pontoons (girders, diaphragms, deck, and barrier).
- Construct south side superstructure on the west lift spans (stringers, grid deck, and barrier).
- Construct east and west approach superstructure on the permanent/temporary crossbeams north of the existing approach spans (girders, diaphragms, deck, and barrier).
- Rehabilitate three existing pontoons stored at Port Gamble.
- Replace draw span anchor cables.

Stage 4 – January 2004 through October 2005

- Shift traffic to the south on the west pontoons and draw spans.
- Construct north side superstructure widening on the west half pontoons (girders, diaphragms, deck, and barrier).

- Construct north side superstructure widening on the west lift spans (stringers, grid deck, and barrier).
- Construct maintenance ramp modifications on the north side of Pontoon K.
- Install gravity anchors and cables for east half pontoons.

Stage 5 – November 2004 through March 2006 (includes Weekend Closure)

- Roll existing approach spans south onto temporary crossbeams.
- Roll new approach spans from the north temporary crossbeams onto the permanent crossbeams.
- Remove existing approach superstructure (after weekend closures).

Stage 6 – April 2006 through June 2006 (completed during bridge closure)

- Remove and replace west transition truss and A-frame.
- Remove east pontoons, superstructure, and east transition truss.
- Install east transition truss and east pontoons.
- Connect anchor cables between pontoons and gravity anchors.
- Remove abandoned anchor cables on the east half.

Stage 7 – June 2006 through January 2007

- Construct mechanical/electrical and control system upgrade on west draw pontoons and lift span.
- Complete miscellaneous minor items.
- Remove temporary crossbeams and work trestles.
- Demobilize.

Construction Methods

A variety of construction methods will be utilized to remove the old pontoons, drawbridge and superstructure. Much of the activity will take place from barges or on the bridge itself. The east half approach structure will be constructed from the temporary work trestles.

- **East Half Floating Structure** – The new pontoons and majority of the superstructure will be constructed in a special off-site graving dock. Pontoons will be floated into the bridge site by tugboat and bolted together. Then the superstructure to connect the pontoons will be installed. Figure 7 shows the process that was used to place pontoons when the west half structure was replaced. A similar process would be used to replace the east half floating structure.

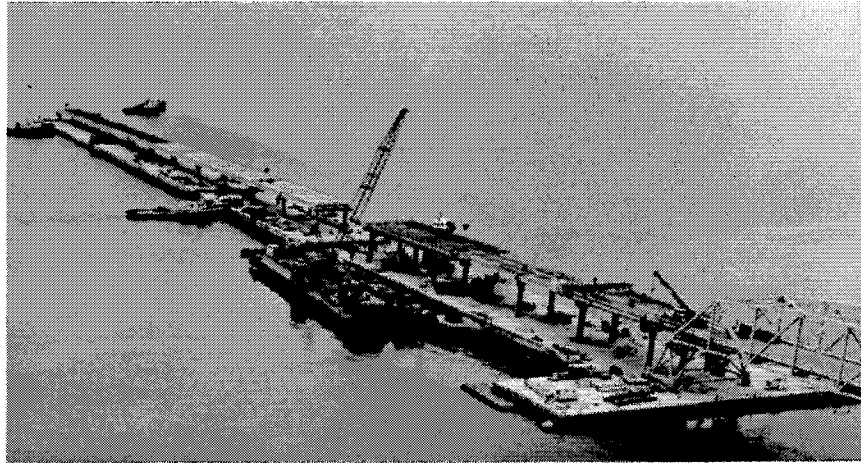


Figure 7: Connecting the Pontoons to the Rest of the Bridge

- **Floating Bridge Anchors** – Twenty new anchors will be set to anchor the new floating structure. The contractor will lease or build a facility for anchor fabrication. Anchor cables will be placed 360 feet apart along the length of the floating structure. The anchors will be set from about 800 to 2,000 feet away from the structure. Engineers learned from the 1979 bridge sinking that these distances provided the most even distribution of pontoon and anchor cable stress during storms. Figure 8 shows how the anchors would secure the pontoons. Figure 9 shows how an anchor is placed.

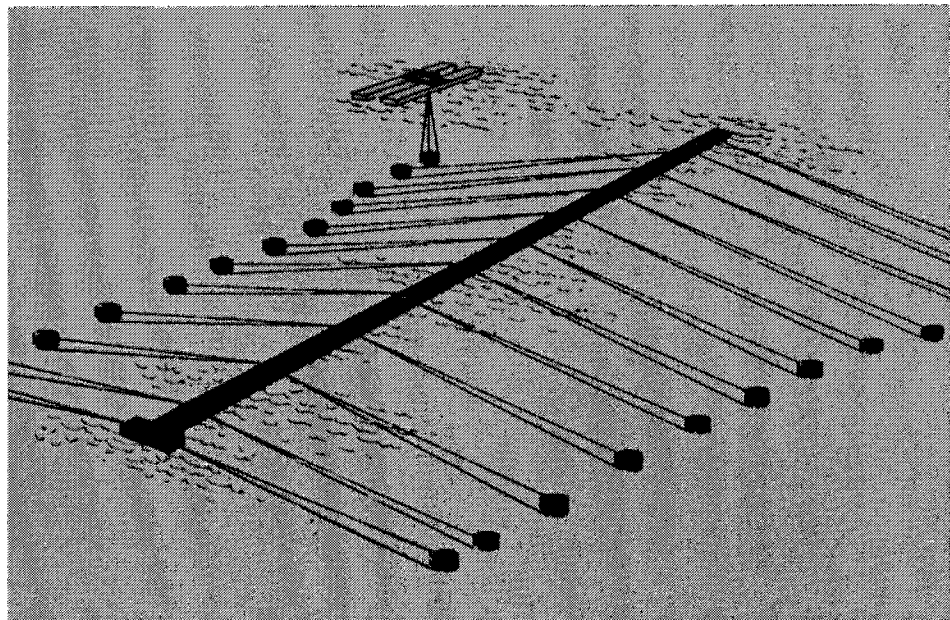


Figure 8: Arrangement of Gravity Anchors

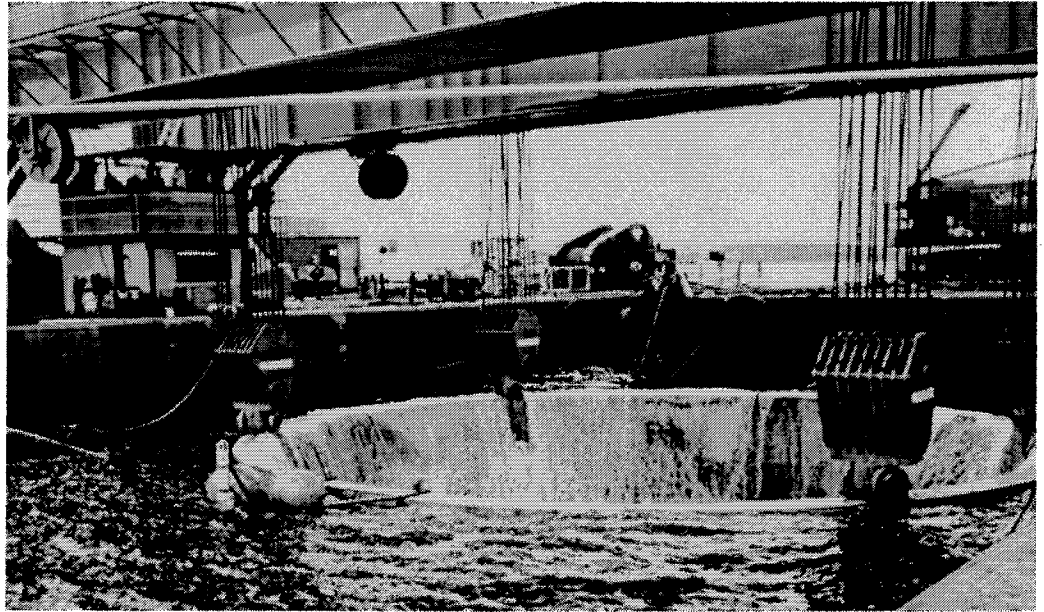


Figure 9: Placement of Gravity Anchors

- **Widening the West Half Superstructure** – The west half of the superstructure will be widened as follows:
 1. Construct crossbeam extensions and place girders. This provides the foundation for a wider roadway.
 2. Place temporary barrier on the south side of the existing superstructure. Demolish the south overhang.
 3. Construct deck widening on south side. The new deck will be supported by the crossbeam extensions and girders placed previously.
 4. Shift driving lanes to the south side of the bridge. There will be two 12-foot driving lanes and no shoulder during this stage of construction.
 5. Demolish the north deck overhang and construct deck widening on the north side. Remove temporary barriers.

- **East and West Approach Spans** – Both of these structures will be replaced in a similar fashion. The current plan proposes to replace each span during two publicized extended weekend bridge closures (Saturday, Sunday, and Monday). The preparatory phases will occur without traffic interruption. Each structure will be replaced as follows:
 1. Construct new piers under the existing superstructure. This provides a foundation for the new bridge before the old piers are removed.
 2. Construct temporary crossbeam extensions. Night lane closures will occur during this phase.
 3. Construct new superstructure on rollers placed on top of temporary crossbeam extensions
 4. Place rollers under the existing approach superstructure and roll onto temporary crossbeam extensions.
 5. Slide new approach superstructure into alignment where the old superstructure was.
 6. Remove rollers. Attach diaphragms to crossbeams to hold down the superstructure. Place expansion joints.
 7. Remove the temporary crossbeam extensions and demolish existing approach structures.
- **East and West Steel Truss Transition Spans** – These structures will be replaced during the 6 to 8 week bridge closure. The superstructure will arrive prefabricated by barge and placed into alignment. Existing piers 3 (west) and 4 (east) will be widened and strengthened. The new truss structure will be wider, stronger, and more earthquake resistant than the existing structure. New concrete will be contained by standard procedures described in the WSDOT Standard Specifications.
- **East Drawspan** – This structure will also be replaced during the 6 to 8 week bridge closure. New mechanical equipment will be installed prior to installing the new drawspan section.

Graving Dock Construction and Operation

A graving dock is a facility used to build pontoons and other large concrete structures that will be floated and towed to a construction site. After the pontoons are manufactured, they will be floated and

docked at an existing moorage. There they will be fitted out and made seaworthy.

Graving docks are located adjacent to a large water body, such as Puget Sound. The contractor will have the choice of using an existing graving dock or constructing a new graving dock for this project as described below.

Contractor Option 1: Use a Graving Dock Provided by WSDOT

WSDOT will select a new graving dock site. WSDOT will obtain the appropriate permits to build and operate the graving dock and make it available to the contractor. WSDOT will be responsible for Endangered Species Act Section 7 consultation and compliance and will obtain ~~concurrence~~ consultation from USFWS and NMFS.

Contractor Option 2: Construct a New Graving Dock at Contractor Selected Site

The contractor chooses to select a new graving dock site and not use the site provided by WSDOT. The contractor will be responsible to obtain all necessary permits and comply with all applicable federal, state, and local regulations; except that WSDOT will be responsible for Endangered Species Act Section 7 compliance and will obtain ~~concurrence~~ consultation from USFWS and NMFS.

A typical graving dock is constructed as follows:

1. Excavate a large flat-bottomed pit adjacent to the shoreline of the body of water. The sides of the excavation can either be constructed vertically by using sheet piling or can be cut back to achieve a stable slope. Typical sizes of graving docks previously used in the Puget Sound are 750 feet x 600 feet, 520 feet x 161 feet, and 400 feet x 140 feet. If staging areas required for storing materials, etc. are included, a graving dock typically takes up 10 to 15 acres. The bottom elevation of the excavation is typically at elevation - 2.0 mean sea level (MSL).
2. At the entrance to the body of water a sheet pile gate is constructed, which is typically about 150 feet wide.
3. The flat-bottomed pit is then dewatered by pumping from the pit by the use of well points, which are pipes placed vertically in the ground around the pit. These well points are also used to control ground water intrusion to the pit while the graving dock is in use.
4. Next a concrete slab is cast on the bottom of the pit to provide a level, stable working surface. Access roads are also constructed

to the edge of the graving dock to facilitate the delivery of materials, equipment, cranes, etc. At this point work can begin.

The pontoon manufacturing process at a graving dock is as follows:

- Place the sheet pile gate and dewater the graving dock.
- Construct pontoons or other concrete structures in the pit.
- At low tide remove the sheet pile gate and allow the water to fill the pit with the rising (flood) tide.
- At high tide, float the pontoons or concrete structure out through the gate and tow to a dock for final construction and outfitting. Upon completion of this work, the pontoons can then be towed to the final project site.
- Allow the majority of water to drain out of the excavation as the tide ebbs from high to low.
- If fish entrapment is a concern at the site at this point in the process, any fish that may be trapped in the pit are removed by an HPA-approved method.
- Re-install sheet pile gate and remove any remaining water.
- Begin process again.

Note: In the case of the Hood Canal Bridge, and assuming the facility is large enough, the 46-foot diameter concrete anchors could also be constructed in a graving dock. The larger the graving dock, and the more pontoons and/or anchors that can be fabricated at one time, the fewer cycles are needed to complete construction of all pontoons and anchors.

Contractor Option 3: Use Existing Graving Dock

An existing permanent facility operates much the same as described above (see Figure 10). The differences are:

1. An existing permanent facility will differ from a new facility described above in that the gate will typically be a permanent gate that can be opened/removed during float out of the structure. Sheet piling will not be pulled and re-installed during each cycle. Also, an existing facility will typically have intake pipes that are used to fill and drain the facility before and after float out.
2. A permanent facility will often have an overhead crane rail system, which is used for handling and placing materials. The facility will typically have vertical side walls constructed from sheet piling.
3. An existing facility may have dewatering wells, as described above. It may also have a trough or moat around the inside perimeter of the facility, which is used to control ground water.

4. All other operations are similar to those previously described.

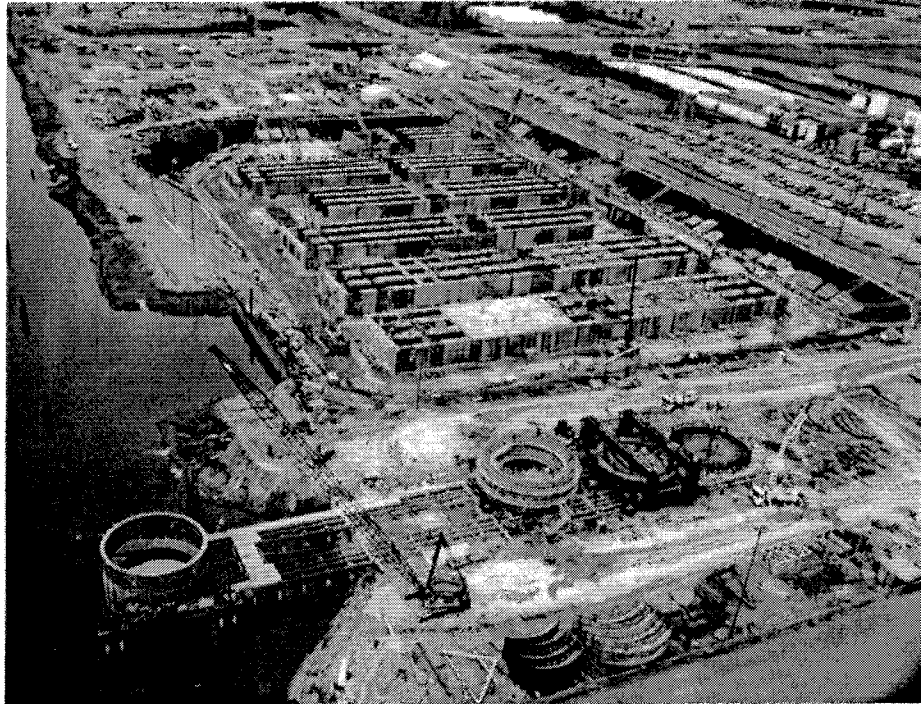


Figure 10: Graving Dock Where Pontoons and Bridge Anchors for West-Half of Hood Canal Bridge Were Constructed.

Contractor Option 4: Use Separate Anchor Construction Site

During previous Hood Canal construction projects, bridge anchors were constructed adjacent to the waterfront in an assembly line type sequence. When completed, they were launched from the shoreline and floated to the site. The general construction process, based on the Hood Canal Bridge West half construction, is as follows:

1. Construct a train rail type system, perpendicular to the waterway, that runs approximately 200' on land and extends out over the waterway. The length of the extension over the waterway will depend on the depth of the waterway and the draft of the anchors. Steel piling supports the rail extension over the water.
2. The anchors are built in phases on land. For example, the bottom slab is constructed, then the lower wall sections, and finally the upper wall sections. The anchors are constructed on wheels and are rolled towards the water as each phase is completed.

Once completed, the anchors are rolled to the end of the rail, over the waterway, and are lowered into the water using a jackscrew system. A section of the rail, the wheels, and the supporting framework are also lowered into the water with the anchor until the anchor floats on

its own. The anchor is then towed to the site. Typically this process is performed at high tide to reduce the amount the anchors need to be lowered. The process is then repeated.

Evaluation of Pontoon Construction Options

WSDOT evaluated pontoon construction options 1, 2, and 3. (Option 4 is not relevant for pontoon construction). Option 3 is preferred because it is an established facility having authorized permits for this type of work. A WDFW biologist visited the site and recommended measures to protect fish. WSDOT will comply with these measures.

WSDOT has arranged for the contractor to be able to lease the Concrete Technology Corporation (CTC) site on the Blair Waterway in Pierce County, Tacoma, Washington. The CTC facility has mechanisms to protect water quality. One end of the graving dock is sloped for equipment access.

Dismantling of Existing Structures

- **East Half Floating Structure** – The east half floating structure will be dismantled by severing the superstructure between pontoons and then unbolting the connections between pontoons. Two to three pontoons will be backed out as a unit with the superstructure still attached. The contractor or new pontoon owner will tow the pontoon to its new location.
- **Widening the West Half Superstructure** – Demolition of portions of the existing superstructure will occur using a special machine that crunches down concrete with a hydraulic claw. The machine will be located on the pontoon below the superstructure accessed by existing maintenance ramps. Concrete chunks will be loaded into waiting dump trucks for disposal at an appropriate upland location. WSDOT Standard Specifications direct the contractor to contain all construction debris.
- **East and West Approach Spans** – A work bridge will be placed around the piers on the north side and then extended to surround the south side. Trestles will be extended to the piers from the work bridge. Demolition of the piers and superstructure of the old spans will occur by use of the various concrete demolition methods. Cranes and trucks will be able to come alongside the bridge to catch the debris.
- **East and West Steel Truss Transition Spans** – These structures will be removed during the 6 to 8 week bridge closure period. Each steel truss section will be lifted out as a single unit and loaded on a special oversized barge.

Impacts of the Proposed Action

Threatened and Endangered Species/Marine Habitat

Affected Environment

The Hood Canal Bridge and the proposed temporary POF terminal sites are located in a productive marine area. Currents, tides, and wind create a nutrient rich environment for marine life near the bridge. The project areas provide habitat for species listed under the Endangered Species Act of 1973 (ESA). The ESA requires that federal agencies consult with NMFS and/or USFWS to ensure that the federal action does not jeopardize the continued existence of listed species, or adversely modify designated critical habitat.

Scientists are also beginning to learn about the complexities of marine life interrelationships. During the last 30 years fish populations have declined throughout most waters of the United States. Biologists now have a revised view of what happens to fish habitat when manmade items are placed on the ocean floor. The National Marine Fisheries Service (NMFS) has the responsibility for monitoring impacts to Essential Fish Habitat (EFH).

EFH is defined as "*the waters and benthos necessary to a species spawning, breeding, feeding, or growth to maturity – its full life cycle*". There are 83 marine species managed by NMFS that are considered under EFH, including anadromous chinook, pink, and coho stocks in Washington, as well as groundfish and coastal pelagics.

The sinking of the Hood Canal Bridge in 1979 left piles of debris on the floor of Hood Canal. This material altered the natural seabed structure. In time marine plants and animals colonized the sunken structure. Approach bridge footings and bridge anchors also act as miniature reefs. Previously scientists believed that manmade reefs and other materials were beneficial to fish and other marine life. These artificial reefs and other structures, however, are not as beneficial as once thought.

Species that are covered under the ESA use the habitat near Hood Canal Bridge, South Point, Port Gamble, and other locations in Puget Sound where a graving dock may be utilized. Table 6 lists all known ESA species that could live or pass through the project vicinity.

Table 6: Potential ESA Species And Critical Habitat In Project Area

Common Name	Scientific Name	ESA Status
Chinook salmon and critical habitat	<i>Oncorhynchus tshawytscha</i>	Threatened
Chum salmon and critical habitat	<i>Oncorhynchus keta</i>	Threatened
Coho salmon	<i>Oncorhynchus kisutch</i>	Candidate
Bull trout	<i>Salvelinus confluentus</i>	Threatened
Steller sea lion	<i>Eumatopias jubatus</i>	Threatened
Humpback whale	<i>Megaptera novaeangiliae</i>	Endangered
Pacific leatherback turtle	<i>Dermochelys coriacea</i>	Endangered
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened
Marbled murrelet	<i>Brachyramphus marmoratus marmoratus</i>	Threatened

Marine**Plants**

Underwater surveys about 1/3 mile north of the west-end of the bridge found that macroalgae cover averaged 17% of the substratum. This consisted primarily of *Ulva* and *Laminara*. *Zostera marina* eelgrass densities averaged 1.1 shoots per square foot. In 2000, Department of Natural Resources surveyed and documented eelgrass on the east shoreline. Cover was continuous and extended north and south of the bridge. On the west shoreline, eelgrass was documented 1,800 feet north of the bridge and 800 feet south of the bridge. In July 2001, eelgrass surveys at the west and east end of the bridge were conducted. Only a small patch of eelgrass was observed under the bridge. Low density eelgrass beds occur at the proposed temporary South Point POF terminal.

Within the proposed project area, densities of macroalgae were visually estimated at approximately 15%. Algae species consisted primarily of *Polyneura latissima* and *Ulva* sp., with lesser amounts of *Gracilaria pacifica*.

Beds of bull kelp, *Nereocystis luetkeana*, have been documented immediately southwest of the Hood Canal Bridge. However, none occur within the project site, including South Point. Kelp beds and other macroalgae can be found in the vicinity of the proposed temporary Port Gamble ferry terminal.

Salmonids and Other Anadromous Fish

The project area provides habitat for three salmon species, regulated under the Endangered Species Act (ESA) of 1973. These species are

- Puget Sound/Strait of Georgia eelgrass Evolutionary Significant Unit (ESU) coho (candidate)
- Hood Canal summer-run chum ESU (threatened)
- Puget Sound chinook ESU (threatened)

Adult and juvenile coho may use the waters near the Hood Canal Bridge for transport. ~~Very little rearing is expected to occur near the bridge due to the lack of in-water structure.~~ Migrating adult spawners are present during December and January. Juveniles are present in April and May. Sub-adult coho salmon commonly stage in Hood Canal before migrating to the ocean. Therefore sub-adult coho could be in the project vicinity all year. Juvenile coho could also be present near the temporary POF facilities.

Both mature and juvenile chum may use the waters near the Hood Canal Bridge for transport. ~~Very little rearing is expected to occur near the bridge due to the lack of in-water structure.~~ From February to May out-migrating juveniles are in the upper portions of the water column (32 feet) as they pass through the project vicinity. Chum may also be present at the temporary ferry facilities.

There are spring, summer and fall runs of chinook salmon in the rivers that feed Hood Canal. Some chinook species may also use the waters near all the ferry facilities. Fall chinook comprise the major portion of the Hood Canal run. Adults and juvenile fish could use the waters near the bridge for transport during migration. Migrating adult spawners and smolts could be present during project activities.

Anadromous bull trout of the Coastal/Puget Sound Distinct Population Segment (DPS) ~~also occur in the project area and~~ may be present near the Hood Canal Bridge and the temporary ferry facilities.

Ground Fish

Ten species of ground fish that may use the project area are included on the Washington Department of Fish and Wildlife (WDFW) priority species list and the National Marine Fisheries Service (NMFS) Essential Fish Habitat list. These are Pacific cod (*Gadus macrocephalus*), walleye pollock (*Theragra chalcogramma*), Pacific whiting (*Merluccius productus*), black rockfish (*Sebastes melanops*), copper rockfish (*S. caurinus*), quillback rockfish (*S. maliger*), yelloweye rockfish (*S. ruberrimus*), lingcod (*Ophiodon elongates*), English sole (*Parophrys vetulus*), and rock sole (*Lepidopsetta bilineata*) (Palsson et al. 1998).

Most of these species are also Washington state listed or candidate species.

Eelgrass and kelp beds are vital habitat for most life stages of these ground fish species (e.g., juveniles and adults) and for ground fish prey.

Shellfish

Shellfish species known to occur in the immediate vicinity of the project area include geoduck (*Panopea abrupta*), native littleneck (*Protothaca staminea*), butter clam (*Saxidomus gigantea*), cockle (*Clinocardium nuttalli*), Macoma clam (*Macoma nasuta* and *M. brota*), horse clams (*Tresus nuttalli* and *T. capax*), and eastern soft shell clam (*Mya arenaria*). Also included are the Pacific oyster (*Crassostrea gigas*), Olympia oyster (*Ostrea conchaphila*), foolish mussel (*Mytilus trossulus*), and California mussel (*Mytilus californianus*).

Crustaceans

Hood Canal has abundant supports populations of Dungeness and red crabs. Both species are frequently associated with eelgrass beds, and prefer sandy or muddy substrates. They feed on a variety of marine life, many of which are found in eelgrass beds. This marine life includes clams, both hard-shell and razor clam types, fish and crabs, and other organisms such as starfish, worms, squid, snails, and eggs from fish or crabs. Box and king crabs may also occur in the project vicinity.

Sand shrimp provide a short, but popular recreational fishery in the vicinity of the bridge for visitors and residents. Pandalid shrimp, a WDFW priority species, may also live in the project vicinity.

Sea Turtles

Leatherback sea turtles, an endangered species, are widely distributed throughout the tropics and subtropics. Nesting occurs in the tropics and subtropics. Sea turtles occasionally occur off the coast of Oregon and Washington and may enter bays and estuaries during the summer months. A sea turtle occurring anywhere in Hood Canal would be an unusually rare event.

Marine Mammals

Humpback whales, an endangered species, are normally observed 30 to 40 miles off the Washington coast. A few whales have been spotted entering Puget Sound from time to time. These observations have occurred during the summer months and were restricted to waters south of Whidbey Island and south of Tacoma. The expected occurrence of humpback whales in the vicinity of the Hood Canal Bridge at any time of the year is considered to be low.

Steller sea lions, a threatened species, are widely distributed throughout the Pacific Ocean. Breeding populations have declined in recent years. No breeding is occurring in Washington State, but sea lions enter Puget Sound during the fall months to feed. Sea lions are opportunistic, feeding on locally abundant species such as rockfish, skate, hake, salmon, halibut, squid and octopus. The chance of a Steller sea lions occurring in the vicinity of the Hood Canal Bridge is low.

Terrestrial

Wildlife and Habitat

The primary avian species of concern in the project area is the bald eagle. Wintering bald eagles occur in the vicinity between about October 31st and March 31st. Numerous bald eagle nesting territories are found along much of the Hood Canal shoreline. Nesting activities occur from about January 1st through August 15th.

No suitable marbled murrelet nesting habitat occurs within the proposed project area. Murrelets may rest or forage within the vicinity of the

Hood Canal Bridge or ~~South Point~~POF facilities. However, no murrelets were observed during any of the field surveys.

Plants

The most abundant natural vegetation on both the eastern and western slopes of Hood Canal in the project vicinity is a mixed deciduous/coniferous second-growth forest. The dominant species include Douglas-fir (*Pseudotsuga menziesii*), western red-cedar (*Thuja plicata*), red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), big-leaf maple (*Acer macrophyllum*), and Pacific madrone (*Arbutus menziesii*). No known listed plant species are located within the project boundaries.

Studies and Coordination

In June of 1999, US West submarine cable contracted Pentec Environmental to conduct eelgrass and macroalgae surveys. The surveys were located approximately 1/3 mile north of the bridge. The DNR Shore Zone Inventory, conducted in 2000, was also reviewed.

In 1999, WSDOT contracted Batelle Marine Sciences Lab to conduct surveys of macroalgae and eelgrass beds in the vicinity of the bridge. The surveys were completed January 12, 15, and July of 2001. In June 2001, Pacific International Engineering, PLLC and Sverdrup completed surveys of marine water traffic mitigation closure strategies.

WSDOT Bridge and Structures Office hosted a meeting with regulatory agencies on May 30, 2000. Representatives from Ecology, Fish and Wildlife (WSDFW), Navy, and Coast Guard discussed potential project issues.

The project area was evaluated, on June 19 and August 30, 2001, by WSDOT engineers and biologists. Land and water features were examined visually. They were evaluated with respect to anticipated impacts to ESA listed species associated with the proposed project concepts.

Information was gathered from WFDW's Priority Habitats and Species Program regarding priority habitats and sensitive plant and wildlife species. The Catalog of Washington Streams for the Puget Sound Region and the Salmon and Steelhead Stock Inventory (SaSSI), ~~(SSASI)~~, was reviewed for fisheries data.

The USFWS and NMFS were contacted regarding threatened and endangered species in the project area. A USFWS and NMFS species listing was generated by WSDOT on February 28, 2002.

A copy of the BA will be submitted to NMFS and USFWS for ~~concurrent~~ consultation with WSDOT and FHWA's effect determinations. Coordination with USFWS and NMFS will continue through consultation as required by Section 7 of the ESA, and as the

project is prepared for bid and construction in conformance with the requirements of the ESA.

Impacts

Construction

Marine Plants

Eelgrass beds are sensitive to changes in light and turbidity. There is a small patch of eelgrass under the bridge. A small amount of eelgrass could be temporarily impacted by the work bridge. Construction activity and barge traffic could have a minor temporary impact on eelgrass beds in the project vicinity. South Point eelgrass beds and Port Gamble kelp beds could be temporarily affected by the proposed floating dock and turbidity and wave action from passenger ferries.

Salmonids

Some project activities would occur within nearshore and tidally submerged marine environments that provide foraging habitat and a migration corridor for anadromous bull trout, sea-run cutthroat, chinook salmon, coho salmon, chum salmon, and pink salmon. The proposed project area provides spawning habitat and a migration corridor for food sources of these salmonid species (i.e., Pacific herring, *Clupea harengus pallasii*; surf smelt, *Hypomesus pretiosus*; and Pacific sand lance, *Ammodytes hexapterus*) to these salmonid species. Some construction sites are within the EFH for salmonids. But it is expected that impacts to all salmonids present will be minimal during times of construction because of construction timing restrictions.

Adult and primarily juvenile salmonids utilize the near-shore areas for migration corridors. No bridge anchors will be placed within these near-shore areas. Therefore, no take is anticipated due to anchor placement.

At the present time, a location for bridge anchor fabrication has not been identified. WSDOT will encourage the construction of an anchor fabrication facility that will essentially be identical to the structure built for the replacement of the west half of the Hood Canal Bridge in 1980. Potential impacts to fish would be minimized by the use of Best Management Practices (BMP's) and Hydraulic Permit Application (HPA) conservation measures.

Water quality and fish entrainment and entrapment are concerns associated with pontoon construction at a graving dock facility. Water quality is a concern because of concrete fabrication and curing in proximity to a water body. Fish entrainment and entrapment are concerns because of the flooded graving dock being open to float the pontoons out, which presents an opportunity for fish to swim into the graving dock.

Ground Fish

Twenty new bridge anchors will be installed to secure the new east side bridge pontoons. The anchors will permanently modify about 0.92 acres of substrate. Anchor placement will probably cause some temporary turbidity

Temporary work bridge activities would require the installation of 150 piles below mean higher high water (MHHW). This project activity will create temporary minor nearshore and intertidal disturbances. Pilings, once installed, could attract Pacific herring during their breeding season. Pacific herring are known to attach their egg casings to bridge piles. A maximum 14 day delay could occur to allow for herring breeding.

The proposed east and west approach structures will be supported by 10 piers (two concrete piles per pier). They will be set on large-diameter drilled shaft foundations. Extensive in-water work will be required in order to construct the drilled shaft foundations for the piers. The initial placement of the outside casing into the unconsolidated bottom may result in the disturbance of fish in the immediate area and the temporary suspension of sediments into the water column. This impact will be short term and relatively minor.

Demolition of the existing bridge piers is not expected to have any negative impacts. This is because all work will be performed from the work bridge to avoid impacts to the Hood Canal seabed. The old bridge superstructure will be crunched down with a special machine, contained, and removed for offsite disposal.

The following table describes the Hood Canal seabed project impacts.

Table 7: Hood Canal Seabed Project Impacts

Bridge Half	New Anchors	Existing Anchors	New Piers	Existing Piers	Temporary Piers
West Half	n/a ¹	39,865 sf	0	480	n/a ²
East Half	40,211 sf	13,680 sf	942 sf	1,320 sf	597 sf

1) The west half anchors, were already replaced, after the west half sank in 1979.

2) Temporary piles are for the work platform and supporting superstructure, which is needed only on the east half of HCB.

Shellfish

Shellfish can be affected by any activity causing bottom disturbance and turbidity, such as pile driving and drilling. Project plans call for shaft drilling to occur within steel casings, which prevents disturbance to the surrounding sediments. Shellfish are not expected to be adversely affected because of mitigation measures inherent in the project design that will minimize impacts.

Crustaceans

The two deep-water crab species (box crab and Dungeness crab) could be disturbed or harmed by temporary water quality impacts associated with bottom activities taking place in the mid-channel area of Hood

Canal, including the setting of anchor structures. As with many other marine species, eelgrass and kelp beds provide vital habitat for several life stages (e.g., larvae, juveniles, and adults) of shrimp species. Any impacts on these habitats also could cause temporary and long-term impacts on shrimp. Mollusks are not expected to be adversely affected because of mitigation measures inherent in the project design.

Marine Mammals and Sea Turtles

No marine mammals or sea turtles would likely be adversely affected by project activities.

Critical Habitat

Nearshore areas are known to be migration corridors and provide chinook and chum critical foraging habitat. Any construction activities causing turbidity, that occurs within depths ~~to less than~~ 40 feet below mean lower low water (MLLW), have the potential of impacting forage fish species (Pacific herring, surf smelt, Pacific sand lance). These species are a significant part of the potential food resources for salmon and trout (indirect effects).

Critical habitat for the project and traffic mitigation sites is not expected to be adversely affected. Protection will be derived from mitigation measures inherent in the project design. The construction of the temporary work bridge and new piers will have minor short-term, and insignificant adverse effects on critical foraging and rearing habitat.

Terrestrial

Wildlife and Habitat

Construction activities are scheduled to occur from the summer of 2003 through the summer of 2006. Bald eagle nesting activity may be affected by construction noise. A detailed BA will be prepared and submitted to the USFWS.

Plants

The construction of the temporary work bridge access will require clearing and grubbing of second growth forest. Affected areas have a high potential for additional runoff of sediment into nearshore areas and the intertidal zone. Without mitigation, zones of temporary high turbidity could be created. A few shrubs may also be removed for the proposed park and ride lots.

Graving Dock Impacts

WSDOT will address Endangered Species Section 7 impacts once a graving dock site has been selected.

Operation

The bridge will function as it does today in terms of its effect on endangered and non-threatened species. After the removal of unnecessary existing footings and associated piers, there will be a small overall net gain in usable seabed. ~~This will be offset by a loss of seabed~~

~~from the new anchors.~~ Temporary POF structures over water will be removed and the sites restored to pre-project conditions.

Use of the project area by bald eagles and marbled murrelets should return to the pre-construction condition.

Mitigation

The project design and scheduling, previously detailed, describes mitigation measures that are built into the project. The Water Quality section details proposed turbidity, erosion control and stormwater mitigation. It is standard practice for WSDOT to replace disturbed vegetation outside the roadway and vehicle recovery zone. WSDOT will also revegetate the access road to the temporary construction bridge with native conifers and other appropriate species after construction is completed.

To avoid any potential impacts to eelgrass at the POF terminals, a ~~slow-down area~~ "no wake" zone will ~~would be~~ established 300 feet from seaward boundary. Supplemental lighting will be installed to minimize shadowing, as feasible, under the work bridge and temporary POF docks to avoid disrupting juvenile salmon migration. WSDOT will review the Ferry Terminal Office use of BMP's on previous projects and apply them to this project as appropriate.

WSDOT will ~~provide~~ supplement possible conservation measures at the graving dock while the Hood Canal Bridge pontoons are being fabricated. These measures may include ~~screening bubble curtain, electrical repelling device, and/or~~ netting to exclude fish from the graving dock facilities. To prevent the possibility of take, a monitoring plan will be developed to ensure no fish are stranded during the pontoon removal process and flooding/ebbing tidal fluctuations. For example, several employees could operate a fish crowding device to direct fish from the upland end to the drainage ports as the tide ebbs to release any captured fish. No uncured products (i.e. grout or fresh concrete) will be in contact with the water. ~~pumped through the floodgates at the selected graving dock.~~

In addition, WSDOT will assure that removal of temporary work bridge ~~and pilings~~ footings at the Hood Canal Bridge does not conflict with the life cycle of the Pacific Herring. Footings will not be removed during the typical 14-day period herring egg incubation period. The temporary work bridge and piling will be removed outside the critical herring spawning period, January 15 to April 14 per WDFW direction.

The project's BA will be reviewed at least every six months before construction begins and throughout the construction period. Through coordination with NMFS and USFWS, WSDOT will ensure that the BA

conclusions and effect determinations have not been affected by new or changed listings of ESA species, any change in the use of the project area by threatened or endangered species, or any changes in the project's construction methods.

Impact Summary

The proposed project is not likely to jeopardize the continued existence of any federal or state threatened, endangered, listed, proposed, candidate, or designated critical habitat. Bridge and POF construction impacts are expected to be minimal. The following table summarizes the impacts and preliminary effect determinations under the ESA.

Table 8: Potential ESA Project Impacts

Common name <i>Scientific name</i>	Impact Analysis	ESA Determination (Preliminary)
Chinook salmon	Interruption of juvenile out-migration within the near shore corridor	LTAA
Chinook critical habitat	Adverse modification of near shore habitat and refuge	NLTAA/WNRAM
Chum salmon	Interruption of juvenile out-migration within the near shore corridor	LTAA
Chum critical habitat	Adverse modification of near shore habitat and refuge	NLTAA/WNRAM
Coho salmon	Interruption of juvenile out-migration within the near shore corridor	WISH
Bull trout	Interruption of juvenile out-migration within the near shore corridor	LTAA
Humpback whale	None predicted	NLTAA
Steller sea lion	None predicted	NLTAA
Pacific leatherback turtle	None predicted	NLTAA
Bald eagle	Noise and disruption	NLTAA
Marbled murrelet	Disruption	NLTAA

- 1) LTAA = May affect and is likely to adversely affect.
- 2) NLTAA = May affect, but is not likely to adversely affect.
- 3) WISH = Will impact suitable habitat and individuals.
- 4) WNRAM = Will not result in adverse modification.

ESA Species

Potential effects to these species were identified from a review of the proposed action, an on-site evaluation of existing habitat conditions, and the current and historical distribution data available for each species. Due to numerous possibilities for high levels of turbidity, indirect effects exist (impacts to food resources) from ferry operations. WSDOT determined that the effect determination will be "may affect, likely to adversely affect" for Puget Sound chinook salmon, Hood Canal summer-run chum salmon, and Coastal/Puget Sound bull trout, and bald eagles.

Upon selection of the graving dock or docks to be utilized for pontoon-and ~~another~~ construction, the BAs will have to be reevaluated to confirm or revise the effect determinations that have been made. The project will produce an overall a net gain of critical habitat. Therefore, the project "may affect, and is not likely to adversely affect" and "will not destroy or adversely modify" chinook and chum critical habitats.

The project is "likely to adversely impact individuals" of Puget Sound/Strait of Georgia coho salmon. In addition the project "may affect but is not likely to adversely affect" marbled murrelets, Steller sea lions, humpback whales, and leatherback turtles or their habitats.

EFH Species

Numerous measures have been built into the design of this project to avoid or minimize potential impacts to EFH. These include

- Reducing the total number bridge piers by two and size of each bridge pier is being reduced.
- Crunching, containing, and removing the old bridge superstructure with off-site disposal.
- Several water quality measures to prevent concrete leachate, lead paint chips and other potentially hazardous materials from entering the saltwater.

Because the project requires impacts to the substrate of Hood Canal and the marine environment, impacts to habitat of species regulated under the Magnuson-Stevens Act and Sustainable Fisheries Act are unavoidable.

Groundfish

The project will result in adverse impacts to substrate used as habitat by groundfish. These impacts are related to anchors and associated cables. These effects are considered permanent because disturbed substrates will not be suitable to allow use by the native benthic species, once installation has been completed. There will also be temporary adverse impacts related to pier footing installation and removal. Therefore, the project will "adversely effect" Groundfish EFH

Salmonids

Temporary impacts to Salmon EFH that may result from project activities during the demolition and installation of the east-half approach structure footings and piers are expected to be mitigated with removal of existing piers. The impacts to Salmon EFH will be insignificant and short-term. Therefore the project will have "no effect" on Salmon EFH.

Coastal Pelagics

Coastal pelagic habitats as defined for EFH do not exist at the project location in Hood Canal, and "no effect" to Coastal Pelagic EFH are expected to result from any project activities.

Secondary Impacts

This project will generate minor positive impacts to threatened and endangered species. The new piers supporting the east and west approach structures require

less ~~tideland-surface~~ nearshore habitat than the existing pier structures. Removal of the old piers will allow these areas to revert to natural marine habitat. The existing footings ~~use cover~~ 1,320 square feet of ~~tideland-nearshore~~ habitat compared to 942 square feet for the proposed structure.

The project will also generate minor negative impacts. About 0.92 acres of substrate will be permanently modified by the placement of new anchors.

A BA ~~is being~~ has been prepared to evaluate the impact to threatened and endangered species and marine habitat. WSDOT will complete consultation with The USFWS and NMFS will evaluate the BA and provide concurrence before the project begins.

Socio-Economics and Transportation

Affected Environment

The Hood Canal Bridge provides the main transportation link between the North Olympic Peninsula and Kitsap County, and on to the Seattle metropolitan area. Local residents cross back and forth across the bridge to commute to work, seek specialized medical treatment, shop, and socialize. The bridge is also a main transportation artery for freight movement.

Northeast Olympic Peninsula has become more dependent on tourism as a source of employment. As an example, more than three million people visit Olympic National Park every year, mostly during the summer. A dependable Hood Canal Bridge is a critical link in encouraging tourists with limited time to visit. The bridge also helps transport goods and services to and from the Puget Sound metropolitan area at a competitive price.

This project is consistent with the following relevant documents:

- *VISION 2020 Update*, Puget Sound Regional Council, 1995
- *Metropolitan Transportation Plan*, Puget Sound Regional Council, 1995
- *State Highway System Plan: 1999-2018*, Washington State Department of Transportation [WSDOT], 1998
- *Kitsap County Comprehensive Plan*, May 7, 1998
- *Results of the 1998 Hood Canal Bridge Origin and Destination Survey*, WSDOT, September 16, 1998
- *2001 Mail/Web Traffic Survey*, WSDOT, 2001

Studies and Methodology

Existing published and unpublished records were evaluated to determine bridge closure impacts and mitigation strategies. This evaluation was supplemented by verbal information from the Port Townsend Chamber of Commerce. Contacts were made with Internal Revenue Service and Puget Sound Truck and Diesel for data about the cost of operating cars and trucks.

A consultant conducted a preliminary analysis to determine potential shoreline impacts from waves generated by passenger only vessels during the 6 to 8 week bridge closure.

Impacts

The biggest socio-economic impact to bridge users would occur during the spring of 2006 when the bridge would be out of service. There will also be two extended (three day) weekend closures. Traffic delays may occur during other construction phases, when a lane is periodically closed. For commuters, truckers, and other travelers, the major cost would be time. Construction activities would be phased to assure a continual passage for marine traffic. Park and ride lot construction near Port Gamble, and South Point could cause temporary traffic delays at some locations.

A survey of commuters found that transitory economic and social impacts would mostly affect people who live in the following locations near the bridge:

- Port Ludlow
- Port Townsend
- Sequim and Port Angeles
- Eastern Jefferson County

People who use the bridge could be affected differently, depending on their lifestyles. Routine visits to medical specialists can be scheduled around the planned closure. Local physicians and hospitals would still be available to handle routine medical care and most types of emergencies.

Tourists would be affected the least. Trips to the Olympic Peninsula are discretionary and can be rescheduled or completed by a longer route. The bridge closure, whether scheduled or unexpected, would have a temporary adverse impact on businesses that depend on tourism.

People who use the bridge to commute to work or conduct business would be most affected during the closure. Without mitigation, a commuter would be forced to drive south on SR 101, east on SR 106, then north on SR 3 to reach Port Orchard, Bremerton, and Poulsbo. This detour would add as much as 87 miles to the trip, for destinations in Kitsap County (see Table 9).

Bridge construction work could create some temporary employment opportunities. There may be local hiring of construction trade workers. Modest benefits could accrue to restaurants, motels, suppliers, and construction material suppliers in the project vicinity.

Most of the traffic originating from the Northeast Olympic Peninsula crossing the Hood Canal Bridge travels on US Highway 101. With the bridge open, a driver would turn east at the junction of SR 104 and drive 16 miles before crossing the bridge into Kitsap County. The junction of US 101 and SR 104 is a major decision point for the motorist. Typically drivers choose to use the Hood Canal Bridge if their destination is in Pierce, King, Snohomish, Skagit, or Whatcom Counties. For destinations to the south, motorists tend to stay on US 101.

Table 9 shows the distances to the most common commuter destinations from the US 101/SR 104 Interchange.

Table 9: Driving Distance From SR 101/SR 104 Interchange		
<i>Destination</i>	<i>Via Hood Canal Bridge</i>	<i>Via SR 101, SR106, & SR3</i>
SR 3/104 Jct.	17 miles	104 miles
Poulsbo	23 miles	97 miles
Kingston	24 miles	102 miles
Bangor	27 miles	93 miles
Bremerton	42 miles	84 miles
Port Orchard	42 miles	84 miles

For most commuters and freight haulers, the extra distance to be traveled from the junction of US 101 and SR 104 ranges from 42 to 74 miles each way. Most of this distance is two-lane highway and is estimated to add from 60 to 100 minutes each way.

Commuters would also pay more to drive to work. There are a number of ways to calculate the cost of driving. Two principles are used in calculating driving costs:

- The more distance driven the higher the cost
- Costs per mile decrease the more a vehicle is driven

It would be impossible for WSDOT to calculate the exact cost for each traveler inconvenienced by the temporary bridge closure. Therefore the standard federal reimbursement rate for 2002 of 36.5 cents per mile was used as an average. This rate is used to reimburse federal and state employees for driving their own vehicles for business purposes. Most local governments and private businesses have also adopted the standard federal reimbursement rate.

At 36.5 cents per mile, a commuter could be spending from \$30.66 to \$54.02 extra each day to drive to work. Some commuters may have jobs that are conducive to telecommuting at least part of the time. Others may stay with friends or relatives, take vacation time, or find lodging near their job during the bridge closure.

Commercial trucks cost more than cars to drive. A freight company must pay ownership, vehicle operating, and labor costs. Larger trucks would cost more to operate and smaller trucks would be less expensive. An 80,000 lb. gross weight truck with driver costs about \$1.60 per mile to operate. Any additional trip mileage could reduce the number of scheduled deliveries. Additional costs would likely be passed on to consumers.

A temporary fishing facility currently exists on the east half of the bridge below the bridge deck on a pontoon. To access the facility, fishermen park on the north

side of the east approach. They walk along the bridge sidewalk and then descend a steep set of stairs to the pontoon. Fishermen may fish on either side of the pontoon. The fishing access is not ADA accessible.

Design considerations and security are the major reasons that the fishing facility will not be replaced. The Hood Canal Bridge, because of its unique design, is extremely vulnerable to vandalism and is currently under 24 hour a day watch by the U.S. Navy. There have been several incidents of vandalism on the bridge, including damage done to the pontoon hatches.

Therefore, the temporary fishing access on the existing bridge will not be replaced on the new facility. This decision is consistent with the agreement signed by WSDOT and the Washington State Department of Fish and Wildlife in April 1984. This agreement specifies that the fishing access would be applicable for the useful life of the bridge structure.

Five different vessels could be put into service on this route: Chinook, Snohomish, Tyee, and Skagit/Kalama. Vessel wakes of 2 to 3 feet every 4 seconds will be generated between South Point and Port Gamble at normal operating speeds of 25 knots. (Data on the Bennett class vessels were not available at the time of this analysis). These wakes may exceed wake wash parameters generated by the Chinook in Rich Passage.

The coastline along Hood Canal consists of various categories of shoreline: Bulkheads, High Bank, Medium Bank, Low Bank, Stream Delta, and Barrier Island. Shorelines categorized as Bulkhead measure 800 feet long on the east side of Hood Canal and 1,800 feet on the west side. High Bank measures 4,000 feet on the east side and 7,000 feet on the west side. Barrier Island measures 0 feet on the east side and 6,200 feet on the west side. These shorelines may be very sensitive to wake wash. If 25 knots is the required speed of the ferry to meet 30 to 40 minute headways, potential impacts to these types of shorelines may be expected.

Sediment at the docks, where not specified as a cobble substrate, is assumed to be medium to coarse sand. Threshold current velocity (initiation of the motion) for woody debris at the Port Gamble site is similar to that of medium and coarse sand – 2 feet per second.

Prop/jet wash from the ferry at the Port Gamble North Alternative site will create some scour during maneuvering operations. The Port Gamble South Alternative and both South Point alternatives will not create scour because the depths are sufficient.

Mitigation

Mitigation measures for socio-economic impacts of project construction basically center on how people and freight will move during the bridge closure period. A summary of the mitigation concepts currently being considered by WSDOT is described in the Proposed Traffic Mitigation Actions section. Mitigation measures and astute personal planning will enable most affected residents to manage reasonably well during the bridge closure.

During the operation of the temporary passenger ferry service, WSDOT will establish a slow-down area 300 feet from the seaward boundary. WSDOT will also monitor the effects of vessel wakes on potentially affected shorelines and adjust vessel speeds, if necessary.

Impact Summary

The project will not have a substantial adverse socio-economic impact to bridge users. The benefits from a dependable, all-weather bridge crossing of Hood Canal far outweigh the temporary impacts from the construction bridge closure. Unavoidable impacts will be temporary during the planned 6 to 8 week period when the bridge will be out of service. Measures have been proposed to mitigate the unavoidable impacts due to the temporary closure of the bridge.

Fishermen who currently utilize the existing temporary fishing access will no longer be able to fish from the Hood Canal Bridge.

Air Quality

Affected Environment

The Hood Canal Bridge is located in a rural environment. The US Environmental Protection Agency (EPA) designates its location as an attainment area for all criteria pollutants. Criteria pollutants are those regulated by the EPA under the National Ambient Air Quality Standards (NAAQS). The region is under the local jurisdiction of the Olympic Air Pollution Control Authority.



Figure 11: The Hood Canal Bridge is located in a rural setting.

All the park and ride sites and POF facilities are also located in an attainment area for all criteria pollutants. Weather conditions in the project are the same as the rest of the Puget Sound Region. This region is characterized by a marine climate that is mild and moist resulting from the westerly winds of the Pacific Ocean. Summertime winds are typically from the north or northwest.

Studies and Methodology

Data from the EPA and local Air Pollution Control Authorities were reviewed. Proposed construction activities and traffic patterns were analyzed to determine probable effects.

Impacts

Construction

Temporary minor impacts to air quality would result from construction activities and detour traffic. Construction emissions would include PM₁₀ (dust particles with a diameter of less than 10 microns), carbon monoxide (CO), and oxides of nitrogen (NO_x). Construction emissions would vary from day to day, depending on level of activity, specific operations, and weather conditions.

During the 6 to 8 week bridge closure many travelers will be forced to drive greater distances. However, this would be counterbalanced by a predicted 59% reduction in the amount of traffic because many

discretionary trips would not occur. CO and ozone precursor emissions levels would increase slightly near those facilities with high detour traffic volumes. These locations include Port Townsend and the proposed temporary ferry and parking facilities at South Point, Port Gamble, and Shine Pit.

Pollutant levels are not expected to exceed the NAAQS with or without mitigation. There are currently six strategies being considered for mobility mitigation during construction. (See Proposed Traffic Mitigation Actions for details). Only four of these strategies will have minimal impact on air quality. Likely temporary air quality construction impacts from each of the strategies will be same as for bridge construction.

Operation

There will be little change from the current situation. As traffic increases at historic rates, the build alternative with wider lanes and shoulders may offer a slight benefit in traffic flow and air quality. Construction of the climbing lane on SR 101, a permanent improvement, will benefit air quality in that area.

Operation of the temporary traffic mitigation facilities will cause temporary localized increases in particulate matter and/or carbon monoxide. Particulate matter will enter the air from a number of sources, including automobile, bus, truck and ferry vessel exhaust. Motor vehicles and ferry vessels emit more carbon monoxide than any other source.

Increases in ferry service and vehicle traffic, including shuttle buses, would increase emissions in localized cases. Operation of park and ride facilities contribute to "cold starts" (starting the car when it has not been used for the past few hours), a source of ozone pollution. Although operation of the park and ride facilities may increase localized emissions, the impact would only last the duration of the operation, which would be from six to eight weeks.

Regional emissions may be reduced during temporary operation of the ferries and park and ride lots. This is expected to occur because fewer cars and trucks would need to drive the long distance detours. Pollutant levels are not expected to exceed the NAAQS under any of the mobility mitigation strategies. There would not be any long-term air quality impacts as a result of the project.

Mitigation

Contractors will be required to follow Best Management Practices (BMPs) for fugitive dust control, which are found in the Associated General Contractors of Washington (AGC) publication, *Guide to Handling Fugitive Dust From Construction Projects*. Fugitive dust will be controlled with a dust control plan including Best Management Practices.

Contractors will be encouraged to control PM₁₀, deposition of particulate matter, emission of carbon monoxide and nitrous oxide, by spraying exposed soil with water, covering exposed soil during grading, covering trucks transporting material, providing wheel washers, requiring appropriate emission control devices and planting vegetation as soon as possible.

Impact Summary

This project will have short-term air quality impacts during construction. But there will not be any long-term air quality impacts as a result of the project. No significant unavoidable adverse impacts on air quality are identified at this project location. Construction emissions would vary from day to day, depending on level of activity, specific operations, and weather conditions. Fugitive dust will be controlled with a dust control plan including Best Management Practices.

Temporary ferry service during the bridge closure will result in the localized increase in vehicle emissions near the ferry terminal. Regional emissions will be reduced because fewer cars and trucks will need to drive the long distance detours. The climbing lanes on SR 101, a permanent facility, will benefit air quality in that area. Pollutant levels are not expected to exceed the NAAQS under any of the mobility mitigation strategies.

Cultural Resources

Affected Environment

The Hood Canal Bridge is a combination of various bridge types and was the first floating bridge constructed over salt water. As such, it is considered significant from an engineering standpoint, as explained below (See table below and page 2 for bridge details).

The original Hood Canal Bridge opened in 1961, after more than three years of construction. Its design was based upon a strengthened version of floating bridges that crossed lakes, such as the Lacey V. Murrow Bridge that carries Interstate 90 over Lake Washington. The Hood Canal Bridge was designed to withstand sustained winds of 58 mph, with gusts up to 100 mph, and waves of 8.9 feet.

Maintenance crews observed stability problems during severe storms. In 1979 a storm with wind gusts to 120 mph sank the west half of the bridge. The east half survived the storm and was eventually connected to the new west half structure.

The new west half of the bridge was built to withstand a far harsher marine environment. Pontoons, superstructures, and anchors were designed to withstand a storm as severe as the one that occurred in 1979. WSDOT engineers applied principles of naval architecture and technology developed for the offshore oil industry. Table 1 shows how the east half and west half bridge components differ.

Engineering Context

The Hood Canal Bridge is the longest floating bridge over salt water in the world. At 7,967 feet total length, the Hood Canal Bridge has a floating length of 6,521 feet. Comparable structures exist in Norway, but are much shorter and less exposed. The Salhus Fjord Bridge has a total length of 4,592 feet, of which 4,087 feet are floating. The Bergsoy Sound Bridge has a total length of 3,060 feet, with a floating length of 2,771 feet.

The original Hood Canal Bridge was not engineered to withstand the storms of the magnitude that caused half the bridge to fail. Its failure clarified the importance of compartmental construction in concrete pontoons, which were used to replace the west half of the structure.

National Register Eligibility

In most situations a structure less than 50 years old cannot be eligible for listing on the National Register of Historic Places (NRHP). Federal law provides an exception if a property has exceptional importance. The Hood Canal Bridge meets the "exceptional importance" requirement because of the significant engineering achievements of the original 1961 floating structure and the west half 1982 replacement floating structure.

This was the first structure of its type built on salt water. Exceptional engineering significance comes from innovations in designs used to overcome the many obstacles at the site. These include deep water, strong currents, high winds, and large tidal fluctuations. As such, both the east half and west half floating portions of the Hood Canal Bridge are eligible for listing in the National Register of Historical Places.

Table 10: Components of the Hood Canal Bridge

Structural Composition

West Half (sunk 1979; replaced 1982): 3,775 foot long floating span; 470 foot long fixed approach and transition span.

East Half (original 1961 construction): 2700 foot long floating span; 920 foot long fixed approach and transition.

Concrete Approaches

West Half: 190 foot long concrete approach on 3 piers with spread footings.

East Half: 640 foot long concrete approach on 7 piers with spread footings.

Transition Spans

West Half: 280 foot steel Warren truss transition span.

East Half: 280 foot steel Warren truss transition span.

Pontoons

West Half: 10 pontoons. Each pontoon has the following dimensions: 360 feet long, 60 feet wide, 18 feet high, 12 foot draft, accommodates 30 foot wide roadway.

East Half: 19 pontoons. Each pontoon has the following dimensions: 360 feet long, 50 feet wide, 14.3 feet high, 9.2 foot draft, accommodates 28 foot wide roadway.

Draw Spans

West Half: "Lift draw" type – replaced original "bulge/double draw" span in 1982.

East Half: "Bulge/double draw" type; original construction including a 471 foot pontoon.

Total Length: 600 feet – designed to allow 600 feet width for marine transportation use.

Buildings

Draw Span Control Towers: All the controls for operating the draw spans are in the west tower, which was built in 1982 on the south side of the west draw span. The east control tower was built in 1961 and is now used primarily for storage.

Generator Building: Constructed in 1982, on the north side of the east draw span.

Storage Building: Constructed in 1982, on the north side of the west draw span

Machinery Buildings: Four small buildings, two on each side of the west draw span, constructed in 1982.

Anchors

West Half: 24 anchors, each weighing from 685 to 1,875 tons.

East Half: 18 anchors, each weighing 530 tons.

Anchor Cables

West Half: 3 inch diameter

East Half: 1.75 inch diameter

There are currently six strategies being considered for traffic mitigation during construction. (See Proposed Traffic Mitigation Actions for details). The proposed temporary ferry terminal facility sites at South

Point and Port Gamble were the only sites that had a reasonable possibility of potentially impacting cultural resources. These two sites have been used as ferry terminals in the past. All areas within the proposed project areas, including the roads accessing the terminal sites at South Point and Port Gamble, were included in the cultural resource survey. The Port Gamble Historic District was listed on the NRHP in November of 1966 as a National Historic Landmark.

Studies and Methodology

Twenty-three references were reviewed and supplemented by a field review to obtain historical information and national historical requirements of the Hood Canal Bridge. A report was prepared and reviewed by the State Historical Preservation Officer (SHPO) to determine the eligibility of the floating structure of Hood Canal Bridge.

In addition, a cultural resources study of previously undisturbed ground at the proposed temporary ferry dock site at Port Gamble and South Point was prepared. Fieldwork and a literature search were conducted to determine if previously recorded historical cultural resources exist in or near the project area.

Impacts

Construction

The east half pontoons and drawspans are eligible for listing in the National Register of Historical Places. These structures will be affected by the proposed project.

The east half pontoons and associated superstructure will be removed and replaced with pontoons that have the same design as the west half of the bridge. Existing pontoons on the west half of the bridge will be retained without modification, except for widening of the superstructure.

The first floor of the west half drawspan tower will be expanded to accommodate a larger generator. All of the east half drawspan, including the tower, will be replaced. SHPO has determined that retrofitting of the west half and replacing the east half of the Hood Canal Bridge will have an adverse effect upon this historic property

No prehistoric cultural resources were observed at the South Point ferry terminal site. The majority of area is currently covered with asphalt paving and the docks are not old enough to meet the threshold for eligibility. There will be no effect at this location.

The entire Port Gamble ferry terminal site is within the Port Gamble National Historic District and listed as a National Historical Landmark on November 13, 1966. A sawmill operated at this location for nearly 150 years. Although the sawmill was razed in 1996, some features of the facility remain and are considered to be contributing elements of the District. These include a wood-frame building, a rock and sand spit and

associated piling, wood plank wharf, barge loading facility and an assortment of concrete structural remains.

The report, prepared by Archeological and Historical Services of Eastern Washington University, has concluded that the parking area and passenger ferry loading facility will not have an adverse effect on surviving historical elements of the mill site or Port Gamble Historic District as a whole if the following recommendations are observed:

- Avoid the contributing historic structural features as listed above during construction and operation of temporary ferry terminal.
- Return the site to the original condition after temporary use for the ferry dock.
- Confine improvements to the access road in Port Gamble to existing right of way.

SHPO has concurred that there are no historic properties at the South Point POF site. SHPO has also concurred that use of former Port Gamble mill will have no adverse effect to the Port Gamble National Historic Landmark District. The following recommendations were proposed by SHPO and will be implemented by WSDOT:

- No further damage or alteration to the remains of mill that has already suffered demolition
- Measures to implement that driver use Puget Way/Walker Street route rather than short cuts through the town

For any questions or issues during POF service and resulting impacts to historic and cultural resources, contact Office of Archaeology and Historic Preservation and interested tribal representative

Operation

All historically significant structures not affected by construction will continue to be maintained and preserved. The new and retrofitted portions of the bridge will be very resistant to storms and earthquake damage. There will be no operational impacts resulting from temporary ferry terminal operations.

Mitigation

The following measures will be provided to minimize harm and provide necessary mitigation for construction impacts to the historically significant portions of the Hood Canal Bridge. A Memorandum of Agreement, pursuant to Section 106 of the National Historic Preservation Act implementing rules, between FHWA and the SHPO has been signed. WSDOT has participated in the consultation and agreed to complete the following by 2008:

1. HAER Documentation

Documentation of the Hood Canal Bridge will be completed in accordance with the Historic American Engineering Record (HAER) standards.

WSDOT will consult with SHPO regarding appropriate documentation to achieve HAER standards, including current view and historic photographs, reproduction of existing engineering drawings, and historical text.

2. Public Information

WSDOT will consult with SHPO and interested parties regarding the development of a public education component of the mitigation package, such as an interpretive display, to be installed either on site or at a site agreeable to all parties.

3. Time-lapse Photography

The process of retrofitting the Hood Canal Bridge will be recorded on videotape and time-lapse photography, thereby creating a visual record of the project.

In addition to this section, WSDOT has prepared a programmatic 4(f) evaluation describing the unavoidable impacts to historical features.

WSDOT will continue to coordinate with FHWA and SHPO when construction activities are initiated. Should any cultural resources be identified at any location during project related activities, work will be halted in the immediate vicinity and an archeologist will be consulted.

Impact Summary

The engineering significance of the floating structures of the Hood Canal Bridge make the structure eligible for listing on the National Register of Historic Places. The improved structural design of the floating structures will not be noticeable to the average motorist. The adverse effect will be mitigated as discussed above. Impacts to the Port Gamble Historic District will be avoided. There will be no impacts to cultural resources from traffic mitigation activities.

Hazardous Materials

Affected Environment

The study area stretches along a 2-mile corridor with no apparent past or present industrial or commercial activities. Historical research and site reconnaissance found the following areas of possible concern located within the area of the proposed improvements.

Lead. Before 1977 paint commonly contained lead concentrations greater than 0.06 percent. Due to the age of the bridge, some or all of the paint could contain lead. Paint that is high in lead can cause human health problems if ingested. Also, landfills may not accept demolition debris that contains lead paint due to potential environmental concerns. Sampling beneath the east and west approach spans and west bridge buttress has confirmed the presence of lead contaminated soil.

Asbestos Containing Materials. The east half of the bridge was constructed at a time when asbestos was commonly used in building materials. Asbestos was used in floor and ceiling tiles, caulking, pipe insulation, and exterior siding. The east tower, east shop building, and sounding tubes on the east end of the bridge may also have materials containing asbestos. Site inspection found potential asbestos containing materials in linoleum tiles, acoustical tiles, caulking, pipe insulation, and exterior siding.

Air Contaminants. Potential hazardous levels of air contaminants can occur inside the pontoons. The bridge crew is required to ventilate the pontoon cells to achieve a safe atmosphere prior to entry. Combustible gas measurements have been indicated in levels in excess of 20% Lower Explosive Limit (LEL) for most cells, with some exceeding 100% LEL according to investigations conducted in 1993. Along with high levels of combustible gases, petroleum distillates and high levels of carbon monoxide gases have been identified.

Bird droppings occur on the bridge structure where birds have roosted for years. Bird droppings have been known to cause Histoplasmosis, a lung disease, if the droppings are contaminated with *H capsulatum*.

Storage Tanks on Bridge Deck. Three above ground tanks exist on the bridge deck, a 1000-gallon tank east of the west tower and two 500-gallon tanks east of the east tower on the roof of the generator room. These tanks are for the storage of diesel fuel to be used for generators during power outages. WSDOT previously removed an underground storage tank from the maintenance facility north of the east end of the bridge. All contaminated soil was removed at that time.

Storage of Solvents, Oils and Paints in East Shop. The east and west shop are the current locations for storage of solvents, motor oil, rust corrosion preventative, lacquer thinner, and paints. The area within and around the shop was clean and no poor housekeeping was evident.

Port Gamble.

The site is currently listed on the Washington State Department of Ecology's Hazardous Site List and is being assessed under the Model Toxic Control Act (MTCA). It is currently ranked a 2, on a scale of 1 to 5, with 1 being the highest level of concern. Contaminants at the site include sediments impacted by previous tenant activities in the areas where both floating docks are proposed to be located. These sediments are suspected to be contaminated with metals, wood debris (toxicity) and Polychlorinated Biphenyls (PCBs). The areas of the proposed ferry docks are currently undergoing sediment characterization by Parametrix, a firm retained by landowner Pope and Talbot.

Petroleum contamination is suspected on the upland portion of the site where former underground storage tanks were located. An oil shed exists in the proposed park and ride lot area. Creosote piling exists on the in-water portion of the site.

Port Gamble is WSDOT's preferred location for the eastern terminal of the temporary passenger only ferry and park and ride facility. This site has been proposed because it is already developed. Temporary use of this site would have minimal impacts to marine habitat.

Studies and Coordination

This discipline study was performed in accordance with American Society for Testing and Materials (ASTM) Practice E 1527-00, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* and Washington State Department of Transportation's (WSDOT) *Guidelines for Preparing Hazardous Waste Discipline Reports* (September 30, 1997). All applicable EPA and Ecology databases, and previous studies in the project area were reviewed.

The information regarding Port Gamble is based on a file review conducted on December 19, 2001 at the Washington State Department of Ecology's Northwest Regional Office and verbal communication with Gail Colburn from the Washington State Department of Ecology.

Impacts

Construction

Lead. Lead based paint chips could be released to soils and/or surface water during demolition activities. Lead contaminated soil may possibly be encountered during the installation of piers and possibly be released to surface waters. Construction workers may be exposed to unsafe levels of lead during construction activities.

Asbestos Containing Materials. Asbestos could pose a threat to human health, if particles are released into the air during demolition. There are also environmental risks associated with disposal if asbestos containing materials are not properly characterized in a formal survey prior to construction activities.

Air Contaminants. During the proposed project workers could be exposed to unsafe levels of sulfur dioxide, carbon monoxide, low oxygen levels and potentially explosive atmospheres within the pontoon cells. Potential air contaminants also exist in areas where birds frequent due to the presence of bird guano. No special disposal issues exist regarding pontoon cells and bird guano.

Creosote Pilings. No creosote pilings will be removed. When the pilings are being tested and strengthened, there is a potential for very small amounts of creosote particles associated with sawdust to fall into the water.

Storage Tanks on Bridge Deck. If tank relocation or disposal is necessary, there would be a risk of releasing petroleum contaminants to soil and/or surface waters.

Storage of Solvents, Oils and Paints in East Shop. Solvents, oils and paints currently stored within structures in the right of way will need to be relocated and stored elsewhere during construction. Improper product handling can pose risks for spill releases to the environment.

Operation

The risks of hazardous materials causing a problem would be less than the existing situation. There would be less asbestos and lead paint than the current situation. The wider bridge deck would decrease the likelihood of accidents and associated potential spills.⁵

Impacts associated with leasing the former Pope and Talbot sawmill include: 1) disturbing contaminated sediments during construction of the temporary passenger only ferry dock and 2) acquiring liability from existing petroleum contamination in the upland area of the site in the park and ride area.

Mitigation

The concerns listed above occur at reasonably predictable sites and can be addressed using abatement and remediation techniques which are relatively routine.

Lead. Structures containing lead based paint will be sampled to determine the appropriate characteristics of the debris for disposal purposes. WSDOT would use this information to address appropriate disposal methods in special contract bid specifications.

Prior to and /or during construction, characterization of soil will be done for proper disposal and protection of workers safety. A health and safety plan will be developed to address workers safety and soil removal options.

Asbestos Containing Materials. Pre-construction investigation and testing is required to determine the location and quantity of asbestos. WSDOT would use this information to address appropriate disposal methods in special contract bid specifications. Mitigation for asbestos containing materials includes removal and disposal of asbestos containing materials prior to demolition.

Air Contaminants. WSDOT will require contractors to train workers regarding potential air contaminants. Contract specifications will require workers to ventilate pontoons before going inside. Workers will take readings with a multi-gas meter before entry and periodically while working in confined spaces. Workers will be required to leave the area if readings fall below safe limits. Respirators will be required for work in confined spaces with significant amounts of dried guano.

⁵ No hazardous material spills have occurred at the bridge since 1986 as per available records.

Creosote Pilings. Contract special conditions will require the contractor take all necessary precautions when working around creosote pilings.

Fuels, Solvents, Oils and Paints.

WSDOT standard contract provisions require contractors to properly manage solvents, oils and paints within structures on the bridge deck. This includes management of diesel fuel in the three above ground storage tanks. If tank relocation becomes necessary, contractors would be required to properly manage and recycle diesel fuel through a local fuel supplier. The contractor is also required to prepare and implement a Spill Prevention, Control and Countermeasures Plan to properly manage all hazardous materials utilized in construction, including those at staging areas.

The existing spill containment plan for the bridge will be improved to reduce the chance of operational vehicle accident spills from entering Hood Canal.

Prior to leasing any property at Port Gamble, more detailed information will be obtained regarding the extent of any contamination existing within sediments surrounding the proposed ferry dock and any upland portion of the site. If existing information is limited (there is currently no estimated sediment characterization completion date) sediment sampling may be necessary. Existing information and/or sampling results will be used to determine any special sediment disposal requirements.

The oil shed in the Port Gamble temporary ferry dock parking area will be protected by a fenced 30-foot buffer. This fencing will deter vandalism and assure that errant vehicles will not accidentally strike the oil shed.

Impact Summary

The proposed project would involve the alteration, removal or demolition of structures with lead paint and/or asbestos. There is also a potential of workers being exposed to air contaminants. These concerns listed above occur at reasonably predictable sites and can be addressed using routine abatement/remediation techniques.

The oil shed in the upland area at Port Gamble will be protected with fencing. Previous tenant activities have generated pollutants where WSDOT plans to locate the temporary floating docks. Coordination with the Department of Ecology will assist WSDOT in avoiding disturbance of these polluted sediments, and associated liability.

Lighting

Affected Environment

The Hood Canal Bridge, has standard lighting for visibility and safety for motorists and marine traffic. Light and glare on the bridge have not been a problem to nearby residents. Artificial lighting exists in varying degrees at most of the proposed park and ride lots and temporary passenger ferry terminals.

Studies and Methodology

The WSDOT project office completed an inventory of existing lighting on the Hood Canal Bridge. Types of available lighting that would be least noticeable by local residents and fish were evaluated.

Impacts

Construction

Construction activities are scheduled to occur from the summer of 2003 through 2006. At times new sources of light and glare would occur from construction activities on the bridge, ferry terminals, and Park and Ride lots.

Most of the proposed traffic mitigation sites are in existing rural commercial centers or isolated from nearby residents. A few surrounding residents at South Point may notice increased lighting during the operation of the temporary ferry terminal.

Artificial light may attract some fish to the surface. This could lead to increased predation of juvenile salmon passing near the temporary ferry terminals and at certain locations on the Hood Canal Bridge.

Operation

After construction, bridge lighting will be similar to the current situation. The new lighting system will be more focused and directional to minimize glare.

Mitigation

The timing of the bridge closure has been scheduled during the months with long daylight hours, ~~and least critical to salmon reproduction.~~ Lighting used during the operation of the temporary ferry terminals will be low illumination directional lighting. Light will be directed onto the trestle, gangway, and float and away from the water. Lighting will be minimized during the early morning hours when ferries will not run. Though mainly directed at salmon, these mitigation measures will also reduce glare and reflected light to nearby residents. Supplemental lighting will be installed to minimize shading impacts, as feasible, under the work bridge and temporary POF docks to avoid disrupting juvenile salmon migration.

WSDOT plans to install additional street lighting in park and ride lots with timers and light sensors. This will generate light when needed for safety and security. Lighting will be directed to retain as much light as possible on site and minimize visibility by residential neighbors. Directional lighting will also be used, as appropriate, on the bridge.

Impact Summary

Artificial lighting at temporary ferry terminals may attract some juvenile salmon toward the surface. This could expose these salmon to a greater likelihood of predation. A few local residents near the Hood Canal Bridge and at South Point may notice slightly more light and glare during bridge construction and temporary ferry dock operation.

Noise

Affected Environment

The Hood Canal Bridge is located in a quiet rural location (see photo in Air Quality section). Shoreline near the bridge is largely wooded with scattered single-family residences and small parks. Few receptors are affected by existing traffic on the bridge.

WSDOT has evaluated the SR 104, east span Hood Canal bridge replacement and determined that while there could be short-term noise impacts during construction, there would not be any long-term noise impacts as a result of the project.

Studies and Methodology

Project noise analysis and mitigation evaluation, if applicable, must be completed for categories of Federal or Federal-aid highway projects. These include:

- Construction of a highway on new location
- Physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

This project will replace the east span of the bridge with a new floating section having the same traffic capacity as the existing section, in the same location. Therefore, a noise analysis is not required.

Impacts

Construction

Construction activities are scheduled to occur from the summer of 2003 through summer 2006. The Hood Canal Bridge will be closed for six to eight weeks during construction between April and June 2006.

Construction noise is regulated by the Department of Ecology (Chapter 173-60 WAC). The maximum permissible noise levels depend on the land uses of both the noise source location and receiving property.

The environmental designation for noise abatement (EDNA) is defined by the land use of a property. In general, residential uses are class A, commercial are class B, and industrial are class C. Permissible sound levels at class A EDNAs are reduced by 10 dBA between 10 p.m. and 7 a.m. Construction noise is exempt from property line standards during daytime hours. Noise levels in Table 11 apply to construction equipment only at class A receiving properties between 10 p.m. and 7 a.m.

Table 11: Maximum Permissible Environmental Noise Levels

EDNA OF NOISE SOURCE	EDNA OF RECEIVING PROPERTY		
	Class A	Class B	Class C
CLASS A	55 dBA	57 dBA	60 dBA
CLASS B	57	60	65
CLASS C	60	65	70
Source: WAC 173-60-030			

The effects of construction noise will be minor. This is because there are few nearby receptors and the majority of the construction work will be completed during daytime hours. Noise variances are required from Jefferson and Kitsap Counties for night work, if construction equipment noise levels at the nearest class A land use is expected to exceed 45 dBA.

Construction equipment and operations would temporarily generate noise during the construction period. Temporary noise increases in certain locations such as South Point and Port Gamble could also result from detour traffic during the planned six to eight week bridge closure. These increases would be temporary in nature and would return to prior levels after completion of the project. Because of the temporary nature of noise increases, mitigation would not be required.

Operation

There would be little change from the current situation.

Mitigation

The following standard WSDOT contract language would apply to this project:

- Limit noisier construction activities near homes to between 7 a.m. and 10 p.m.
- Require construction equipment engines to have working mufflers and silencers.

- Turn off construction equipment that is not used for prolonged periods of time.
- Locate stationary equipment away from residential uses wherever possible.
- Noise variances will be obtained from Jefferson and Kitsap Counties if the night time activity noise levels are expected to exceed 45 dBA.

Impact Summary

Construction activities would produce minor and transitory noise impacts. Noise levels would return to prior levels after completion of the project.

Visual Quality

Affected Environment

The Hood Canal Bridge is located in a quiet rural location (see Figure 11). Shoreline near the bridge is largely wooded with scattered single-family residences and small parks. The dominant features are the Hood Canal and the heavily wooded bluffs. Motorists enjoy panoramic water and mountain views as they drive across the bridge.

WSDOT will provide passenger only ferry service across Hood Canal between Port Gamble and South Point. The proposed Port Gamble passenger only ferry facility will be located in an existing industrial area. The South Point passenger only ferry facility will be located in a low density residential area.

The park and ride sites can be characterized as a mix of urban and rural uses that include industrial, commercial, and residential.

Studies and Methodology

Visual quality analysis was performed under the guidelines of the U.S. Department of Transportation, Federal Highway Administration publication *Visual Assessment for Highway Projects*, March 1981. Affected locations are evaluated based on vividness, intactness and unity before and after the proposed project.

Impacts

Construction

Construction activities are scheduled to occur from the summer of 2003 through summer 2006. There will be temporary minor visual impacts as new approach structures are removed and built. Many motorists would notice the effects of vegetation removal near the bridge approach section.

Construction equipment in the water off South Point may result in a temporary reduction in visual quality for some nearby residents. Similar effects would occur near some park and ride facilities.

Operation

There would be little change from the current situation. Although the new bridge structure would be wider than the existing bridge, increased scale of the structure would not be readily noticeable. The roadway would still have two lanes. The new wider and more unobtrusive rectangular approach bridge structure would provide a slightly better frontal view of the wooded hills across Hood Canal. This would be balanced by a slightly more restricted side view on the bridge.

Large existing parking areas adjacent to the bridge would be retained. These tend to offset the added massiveness of the bridge from the initial perception of the viewer. Removing the curve in the existing bridge would make the structure appear more unified and intact to the motorist.

Temporary passenger only ferry facilities will be removed after construction. Park and ride lots would also be returned to their previous condition.

Mitigation

Construction

No mitigation is proposed.

Operation

WSDOT standard practice requires replanting areas where vegetation is disturbed on the slopes facing the residential area. WSDOT will also revegetate the access road to the temporary construction bridge with native conifers and other appropriate species after construction is completed.

Impact Summary

Construction equipment may cause a minor temporary change in visual quality for some residents living at South Point and proposed park and ride lots.

Water Quality

Affected Environment

The Hood Canal Bridge spans the north end of a saltwater fjord. The bridge and bridge approaches are located in the Port Gamble subbasin of Water Resource Inventory Area (WRIA) 15 and the Ludlow subbasin of WRIA 17. Hood Canal has a slow exchange rate compared to the Strait of Juan de Fuca and most of Puget Sound. If pollutants enter Hood

Canal there is potential of persistent water quality problems and reduction of dissolved oxygen.

For the integrity of the floating sections of the bridge, it is imperative that rainfall and water from waves drain off the bridge as quickly as possible. Water collecting on the bridge was a factor in the sinking of the west half in 1979. Water cannot be stored or retained on the bridge for any reason. A floating bridge by nature has a negative vertical profile because it is lower than the surrounding land. This precludes gravity flow of water off the bridge for treatment on land.

Presently, runoff from the upland roadway areas immediately adjacent to the east and west approaches is conveyed down the slopes to Hood Canal. The current bridge drainage configuration provides regularly spaced outfalls that drain into tidelands, shallow water and deep water. All highway generated runoff drains directly to Hood Canal without water quality treatment. This allows roadway pollutants to enter Hood Canal.

Salt Water

With the exception of Port Gamble Bay, the surface waters of the upper Hood Canal watershed exhibit relatively high water quality conditions and are designated as Class AA waters by the State of Washington (Bremerton-Kitsap County Health District 1998). The Washington Administrative Code (WAC 173-201A-030) defines Class AA waters as extraordinary, in that they markedly and uniformly exceed the requirements for all or substantially all uses. Port Gamble Bay is designated as a Class A water (excellent) which meets or exceeds the requirements for all or substantially all uses.

Water quality in upper Hood Canal is generally good, although portions of the canal are listed on the Washington Department of Ecology section 303(d) list of impaired and threatened water bodies issued in the year 2000. The main parameters of concern are temperature and dissolved oxygen. There are localized occurrences of specific chemical contamination near the Bangor naval submarine base, nine miles south of the project area. However, the data do not support the 303(d) report conclusion (Ecology 2000) that temperature is a parameter of concern in the bridge area.

Marine waters off South Point and Port Gamble have natural environments similar to the Hood Canal Bridge. Water quality in these areas is classified AA to A.

Fresh Water

There are no streams, ponds, or lakes within the bridge construction project limits

The Shine Gravel Pit site is currently an operating gravel pit and is located about one-half mile from a salmon bearing stream. All drainage is retained within the pit site.

Groundwater

Several wellhead protection areas also exist in the project vicinity, although only two of these are located within the project boundaries.

The Savante water system provides drinking water to four or five households. The well that feeds this system is located about 0.4 miles south of the east end of the bridge. Two other wellhead protection buffer zones near each end of the bridge may intersect with the project limits.

Studies and Methodology

Identification and evaluation of surface and ground water characteristics in the project vicinity required coordination with public agencies, special interest groups, and Native American tribes with interests and familiarity with the project area. Geographic information system mapping information was obtained from several agencies. A field investigation was conducted to evaluate the existing conditions at the bridge and to confirm general water quality characteristics.

The following agencies were contacted for information:

- Kitsap County Departments of Community Development, Health, and Public Utility District
- Jefferson County
- Washington State Departments of Ecology, Health, Fish & Wildlife, and Natural Resources
- Puget Sound Water Quality Action Team
- Port Gamble S'Kallam Tribe
- Point No Point Treaty Council
- Skokomish Tribe
- Hood Canal Coordinating Council
- Hood Canal Watershed Project Center
- United States Geological Survey
- United States Environmental Protection Agency

Information was also obtained from the following documents:

- *Upper Hood Canal Watershed Action Plan*, UHCWMC 1998
- *1998 Annual Report for the Upper Hood Canal Watershed*, Bremerton-Kitsap County Health District
- *Stage 1 Technical Assessment as of February 2000*, Water Resource Inventory Area 17, Water Resource Inventory Area 17 Planning Unit, 2000
- *Washington State Marine Water Quality in 1996 and 1997*, Department of Ecology 1998

- *Summer Chum Salmon Conservation Initiative*, Washington Department of Fish and Wildlife, 2000
- *Land Use, Critical Areas, and Stormwater Ordinances*, Kitsap and Jefferson Counties.

Impacts

Construction

Salt Water

The primary threat to water quality during bridge construction is increased temporary turbidity and suspended solids in marine waters. Proposed POF construction at Port Gamble, and South Point has the potential to create temporary turbidity. Accidental spills of fuel, chemicals, and other hydraulic fluids are also a concern.

Placement of the new anchors will cause temporary increases in turbidity. This would be confined to deep water locations and have little impact.

Temporary work bridge construction will result in disturbance of soils in the shoreline area near the bridge. These soils could then erode to the shoreline and into Hood Canal. The result will be temporary increases in turbidity and suspended solids in the shallow waters. Pile driving has the potential of causing increases in turbidity and suspended solids.

Drilled shaft foundations for the approach spans involve extensive in-water work. WSDOT standard contract conditions require construction methods that adequately contain building materials. Spills of slurry, concrete, or excavated material are possible, causing localized water quality impacts.

Demolition of the old piers and foundations could result in disturbance of near shore area and increases of turbidity and suspended solids. Falling debris will be contained.

Concrete pouring will occur in construction of all portions of the bridge approach and superstructure. Concrete spills could result and affect pH levels in the near-shore area. The pH level of water affects aquatic organisms directly, and also indirectly by controlling the equilibrium of other potential water quality reactions (e.g. ammonia, hydrogen sulfide, and heavy metals reactions). Most aquatic organisms function best in near-neutral pH conditions. WSDOT standard contract conditions require construction methods that typically contain any concrete that might be spilled.

Widening the west half of the floating bridge will involve demolition of some of the existing roadway. Very little of this material is expected to fall into Hood Canal because of required construction methods.

Construction of the new pontoons and anchors will occur offsite at a graving dock. These facilities have the potential to leak concrete residue into surrounding marine waters.

Streams

The Shine Gravel Pit site, because of its isolation and permeable soils, has little potential for erosion problems. The temporary parking areas at Port Gamble and South Point do not drain to streams.

Groundwater

The groundwater protection zone for the Savante well is beyond the project staging area and would not be affected by construction activity. Groundwater moves toward Hood Canal away from all wellheads. Pollutants that may be generated by construction activities is unlikely to affect the two wells whose buffer zones intersect the project area.

Operation

Salt Water

The new pontoons and superstructure will have the same stormwater design constraints as the existing bridge. Rainfall and water from waves must continue to drain off the bridge as quickly as possible. Water cannot be stored or retained on the bridge for any reason. Water quantity treatment (flow control) will not be required on this bridge there is direct discharge to marine waters.

WSDOT has determined that providing water quality treatment on the bridge would not be feasible and effective. It would also be cost prohibitive. An analysis and report was submitted to Washington State Department of Ecology,

Ecology concurred that collection and treatment of the stormwater runoff from the bridge is not practicable and not required for the floating structure. There is no evidence that the current discharge is impacting water quality or exceeding state water quality standards. However treatment for water quality will be required for the stormwater generated from the new impervious bridge approach surfaces. Ecology also concurred with WSDOT's proposal to re-route the discharge collected from the bridge approach area to an area of deeper water.

The reconfigured bridge will increase the amount of impervious roadway surface by 80,000 square feet. However, the number of traffic lanes will not change. The project will not cause an increase in traffic or vehicle related pollutants. With more impervious surface and no increase in traffic capacity, there is potential for pollutant concentrations to be less than the existing situation. Wider lanes and shoulders will reduce the number of accident-caused spills likely to occur. Cleanup crews will also have better access if and spills were to occur.

The park and ride sites will be temporary facilities used only during the 6 to 8 week bridge closure. These facilities will not add any new impervious area.

Streams

Impacts to streams will be unchanged from the current situation.

Groundwater

Impacts to streams will be unchanged from the current situation.

Mitigation

Construction

- The conditions of all local, state and federal permits will be implemented.
- Standard WSDOT contract language requires contractors to follow WSDOT erosion control specifications and BMP's.
- WSDOT will require the contractor to use all appropriate engineering, construction, and sequencing to avoid disturbing marine sediments, both in bridge construction and the use of ferry terminals to mitigate traffic impacts.
- Standard WSDOT contract language requires contractors to prepare and implement a spill prevention, control, and countermeasures (SPCC) plan to be used for the duration of the project. The SPCC Plan includes extensive protections for in-water and over-water work.
- The contractor will be required to assign a spill control supervisor and erosion control lead responsible for implementation of the plan.
- Standard WSDOT contract language prohibits the disposal of construction waste, or any materials into the waters of Hood Canal. Contractors will assure continuous inspection to avoid spills of slurry during drilling operations.
- A hydraulic cruncher or ram hoe will remove the bridge rail and portions of the bridge deck. Small dump trucks will be positioned on the pontoon deck below the roadway. This material will be deposited directly into dump trucks and be removed from the site. Very little of this material is expected to fall into Hood Canal.
- The work bridge (made of untreated wood) for the approach span will allow heavy construction equipment to access the intertidal area with minimum disturbance. The work bridge will also decrease the need for barges and act as a barrier for any debris or construction material that falls from the bridge.
- The existing roadway superstructure above the bridge pontoons (except for the rail and portions of deck as mentioned above) will not be demolished in place. Instead, roadway sections will be rolled out of place onto temporary platforms where they will be lifted off. The sections will be transported offsite for demolition, minimizing potential impacts to beach areas.
- Gravel or crushed rock ballast used to sink the anchors will be washed offsite prior to being placed within the anchors. Ballast will be placed at the surface just prior to lowering the anchors, as opposed to below the surface where spillage could occur.
- Some unneeded old pier footings will be removed at low tide and out of the water. All footings in this zone will be removed at low tide to reduce turbidity.
- After demolition of the existing piers and structures, near-shore and intertidal habitat that is damaged or destroyed during construction will be restored.
- The graving dock site will be fitted with the best equipment possible to minimize the amount of concrete byproducts leaking into marine waters.

- Compost berms will be provided around the perimeter of the South Point and Port Gamble Park and Ride Lots. This will assure that runoff from the parking areas is filtered through the compost before entering the water.

Operation

Stormwater will be diverted away from the intertidal areas by tightline storm pipes and released in deep water. WSDOT will also continue to research and implement effective means of spill containment on the pontoons.

WSDOT Maintenance crews will regularly sweep the bridge and keep potential pollutants from entering marine waters.

Impact Summary

The project will not result in significant adverse impacts on water resources. Expanding the bridge will increase impervious surfaces, but have little or no effect on the amount or quality of stormwater discharged directly into Hood Canal. The proposal includes BMPs for operation and construction activities in compliance with WSDOT's *Highway Runoff Manual* and the Washington Department of Ecology *Stormwater Management Manual for the Puget Sound Basin*.

Wider lanes and shoulders will help prevent accidents and spills. Tightline piping will divert stormwater away from intertidal areas. As such, this project will likely result in slightly improved water quality in tidal areas compared to the existing situation.

Secondary and Cumulative Impacts

The purpose of this proposed project is to preserve the existing Hood Canal Bridge. Roadway capacity will not be increased. There will be no secondary or cumulative adverse impacts to the environment or surrounding communities.

Construction and operation of POF terminals will result in temporary impacts, mainly during the planned six to eight week bridge closure. In the long run, the project will have beneficial impacts on marine habitat and water quality. The wider lanes and shoulders on the new bridge superstructure will improve safety and mobility, as well as faster access for emergency vehicles.

Construction of this project will likely prevent the secondary and cumulative impacts of an unplanned bridge failure. The improved design and materials will make the structure more resistant to earthquakes and storm damage.

Threatened and Endangered Species/Marine Habitat

This project will generate minor positive and negative impacts to threatened and endangered species. The new piers supporting the east and west approach structures require less tideland surface than the existing pier structures. Removal of the old piers would allow these areas to revert to natural marine habitat. The existing footings use 1,320 square feet of tideland compared to 942 square feet for the proposed structure. About 0.92 acres of substratum will be permanently

modified by the placement of new anchors. A BA is being prepared to evaluate the impact to threatened and endangered species/marine habitat. USFWS and NMFS will evaluate the BA and provide ~~concurrent~~ concurrent consultation before the project begins.

Water Quality

The temporary construction impacts will be mitigated as discussed in the water quality section. The project will produce the following beneficial impacts after construction:

- The existing steel superstructures of the east and west approach structures will be replaced with concrete superstructures. This will eliminate the lead paint remaining on the existing superstructure. The new concrete superstructures will not require future painting contracts for preservation.
- Guide rollers are used on the existing east drawspan to keep the drawspan on the track as it is moved. These guide rollers require regular lubrication with grease to function. The guide rollers on the west & east drawspans will be replaced with skids that do not need lubrication to function, reducing spill potential.
- The stormwater discharge from the approach span structures will be collected and routed to an area of deeper water. Presently the water is being discharged directly to the intertidal area.

Public Outreach and Agency Coordination

WSDOT public involvement focuses on the following activities:

1. Inform the public of project status and timelines during the project development phase.
2. Solicit input for a bridge closure mitigation plan and keeping the public informed of its evolution.
3. Inform the public about activities well in advance of their occurrence throughout the construction phase.

Closure Mitigation Plan

In 1999, WSDOT began working with several agencies and businesses to facilitate development of the Closure Mitigation Plan and to assure active participation by communities most affected by the closure. Major members included:

- Peninsula Regional Transportation Planning Organization (PRPTO).
- Hood Canal Bridge Replacement Advisory Committee (HCBRAC). This group was organized from members of the PRPTO to provide technical assistance to the process of developing closure mitigation measures.
- Hood Canal Bridge Replacement Stakeholders Committee (HBRSC). This group was organized from members of the PRPTO to review the HCBRAC suggestions, offer recommendations, and provide overall direction on the development of the Closure Mitigation Plan.

- Other planning partners included the U.S. Navy, Washington State Ferries, Port Gamble S'Klallam Tribe, transit agencies, freight haulers, local agencies, , and ports.

HCBRAC brainstormed a list of 62 ideas to help address transportation demand during the bridge closure. The committee combined and refined these down to 48 options. HBRSC prepared a fatal-flaw analysis that pared the list down to 15 options. These were reviewed against several variables that evaluated effectiveness and tradeoffs.

The 15 options were presented to the public at four open house meetings. A meeting was held in each of the counties surrounding the bridge (Kitsap, Jefferson, Clallam, and Mason Counties). 200 people attended the meetings. Informational flyers were also widely distributed that encouraged citizens to vote for their favorite options or suggest a new option. This process further refined the list down to 11 mitigation strategies, which included two new ideas generated by public participation. Ferry service enhancement options received the most votes from the public. Other potential ferry routes included Port Townsend to Edmonds, Port Townsend to Kingston, Port Townsend to Seattle, and some type of freight barge service.

WSDOT, after discussion with other planning partners, have tentatively chosen the six mitigation strategies listed in Table 4. These strategies appear to be the most efficient way of serving the majority of people who would normally use the bridge.

Closure mitigation will continue to evolve based on input from the public and interested agencies. It is anticipated that the analysis will be complete and Closure Mitigation Plan ready for implementation by late 2002.

Agency Specific Coordination

WSDOT is working with Kitsap Transit and Jefferson Transit to assure service coordination to supplement temporary ferry service. WSDOT has also coordinated with the State Departments of Fish & Wildlife and Ecology; Federal Highway Administration; and the U.S. Fish & Wildlife Service and National Marine Fisheries Service.

The Transportation Permit Efficiency and Accountability Committee (TPEAC) has chosen the Hood Canal Bridge project as one of three pilot projects. . This committee was established by the 2001 Washington State Legislature to find ways to coordinate and streamline the environmental permit process, as per the Environmental Permit Streamlining Act. The Pilot Projects subcommittee under TPEAC was established to oversee permit coordination for these projects. All federal, state, and local permitting agencies have been invited to participate in early coordination for the Hood Canal Bridge project. Meetings have already occurred, including a site visit to the bridge and closure mitigation sites, on December 13, 2001.

Public Involvement

WSDOT plans to keep the public informed throughout project development and construction. WSDOT has made initial contacts with South Point area neighbors regarding how potential temporary use of the old ferry dock site could affect them. Some local residents have expressed concern about traffic, parking, and access to their properties during the bridge closure.

~~Four~~ Five newsletters have been mailed to the public outlining the project and closure mitigation plan. The latest newsletter, dated June/July 2001, included a survey to update origin and destination information. ~~A public hearing will be held on this Environmental Assessment if requested, and~~ The latest newsletter, dated May 2002, provided a project overview and a schedule of open house meetings. WSDOT plans to host evening public open house meetings as needed in June 2002 at Sequim, Chimacum, and Poulsbo. More open house meetings will be scheduled as needed once construction commences.

The Port Townsend Leader and Peninsula Daily News (Port Angeles) have published articles about the project. These stories focus on the project need and help prepare the public for the closure period. Display ads have also been placed in the North Kitsap Herald, Peninsula Daily News, Port Townsend Leader, and Shelton Journal notifying the public of upcoming public meetings.

The public may also find information about the project on the Hood Canal Bridge portion of the WSDOT homepage at:
<http://www.wsdot.wa.gov/projects/sr104hoodcanalbridgeeast/> The site features a direct e-mail link to the project office that allows the public to get accurate answers to questions in a timely manner.

Appendix A

PRELIMINARY COMMITMENT LIST

State Route 104

Hood Canal Bridge 104/005.1 (West Half)
104/005.2 (East Half)

Prepared By:
WSDOT Olympic Region

May 2002

WSDOT has committed to the following mitigation measures for this project.

1. Several traffic mitigation measures are discussed in the Traffic Mitigation section of this document. These measures will be implemented during the bridge closure period.
2. A Memorandum of Agreement between FHWA, SHPO, and WSDOT was signed in October 2001 requiring WSDOT to document the existing bridge for the Historic American Engineering Record. The agreement also requires WSDOT to provide time-lapse photography of the bridge rehabilitation and a public education component. WSDOT has committed to completing these obligations by December 31, 2008.
3. All mitigation discussed in each environmental subsection will be implemented.
4. If the contractor chooses to use the CTC facility, WSDOT is committed to providing the mitigation as outlined by WDFW in their letter to WSDOT dated January 22, 2002.
5. WSDOT will comply with every permit condition for all required regulatory agency permits.

Appendix B

SECTION 7 CONSULTATION

State Route 104

Hood Canal Bridge 104/005.1 (West Half)
104/005.2 (East Half)

Prepared By:
WSDOT Olympic Region

May 2002

The final Biological Assessment ~~will be available in March 2002 and subsequently~~ has been submitted to NMFS and USFWS for ~~concurrence~~ consultation. Section 7 consultation and coordination with USFWS and NMFS will continue as the project is prepared for bid and construction in conformance to the requirements of the Endangered Species Act.

Appendix C

**SECTION 4(f) NATIONWIDE
PROGRAMMATIC EVALUATION AND
APPROVAL**

State Route 104

**Hood Canal Bridge 104/005.1 (West Half)
 104/005.2 (East Half)**

**Prepared By:
WSDOT Olympic Region**

May 2002



Washington State Department of Transportation

**SECTION 4(f) NATIONWIDE PROGRAMMATIC
EVALUATION AND APPROVAL**

for

**FHWA PROJECT THAT NECESSITATES THE USE OF A
HISTORIC BRIDGE**

State Route 104

Hood Canal Bridge 104/005.1 (West Half)
 104/005.2 (East Half)

Prepared By:

WSDOT Olympic Region
Environmental and Hydraulic Services Office

OL-3305

August 2001

SECTION 4(f) NATIONWIDE PROGRAMMATIC EVALUATION
for
FHWA PROJECT THAT NECESSITATES THE USE OF A HISTORIC
BRIDGE
State Route 104
0L-3305

This report has been prepared in accordance with Federal Highway Administration guidelines for Section 4(f) programmatic evaluation of projects that include the use of historic bridges. This proposal involves retrofitting the west half of the Hood Canal Bridge (104/005.1) and replacement of the east half of the Hood Canal Bridge (104/005.2)

Existing Facility

The Hood Canal Bridge provides the major transportation connection between the northeast Olympic Peninsula and Kitsap, King, Pierce, and Snohomish Counties. This route is important to commuters, tourists, people needing specialized medical services, and freight delivery.

The bridge, located on SR 104, is 7,869 feet long and exists in a severe marine environment. It must withstand open sea waves, strong winds and tidal fluctuations of as much as 16.5 feet. The Hood Canal Bridge provides a connection between the Olympic and Kitsap Peninsulas across a body of water that reaches 340 feet in depth. The boundary of Kitsap and Jefferson Counties runs down the center of the Hood Canal.

The Hood Canal Bridge was opened to traffic on August 12, 1961. It was officially named the William A. Bugge Bridge on July 12, 1977 in honor of a prominent former Director of the State Department of Highways. On February 13, 1979, during a severe storm, the west half of the bridge sank. The structure succumbed to sustained winds of up to 85 mph and wind gusts estimated at 120 mph. It took three years to design and construct the replacement west half bridge and repair damage to the east half.

This structure is a combination of various bridge types: A fixed span structure enters the Hood Canal from both the west and east shores. A pier supported concrete transition span joins the fixed span to the floating bridge. It is the longest floating bridge on salt water in the world. The Hood Canal Bridge features:

- Two concrete and two steel truss approach spans
- 29 floating concrete pontoons
- Concrete roadway elevated above the pontoon decks
- 2 draw spans
- 42 submerged concrete anchors with steel anchor cables connecting the anchors to the floating pontoons.

4(f) Historical Property Evaluation

The pontoons are arranged longitudinally, connected end-to-end. They are held in place laterally by the cables attached to the anchors, which lie on the canal bottom to either side of the floating structure. Five pontoons float in a transverse configuration. Three pontoons support the newer west half lift/draw span, and one pontoon supports each of the floating piers under the Warren truss transition spans. The following table provides further details of the parts that compose the bridge.

Table 1: Components of the Hood Canal Bridge

Structural Composition

West Half (sunk 1979; replaced 1982): 3,775 foot long floating span; 470 foot long fixed approach and transition span.

East Half (original 1961 construction): 2700 foot long floating span; 920 foot long fixed approach and transition.

Concrete Approaches

West Half: 190 foot long concrete approach on 3 piers with spread footings.

East Half: 640 foot long concrete approach on 7 piers with spread footings.

Transition Spans

West Half: 280 foot steel Warren truss transition span.

East Half: 280 foot steel Warren truss transition span.

Pontoons

West Half: 10 pontoons. Each pontoon has the following dimensions: 369 feet long, 60 feet wide, 18 feet high, 12 foot draft, accommodates 30 foot wide roadway.

East Half: 19 pontoons. Each pontoon has the following dimensions: 360 feet long, 50 feet wide, 14.3 feet high, 9.2 foot draft, accommodates 28 foot wide roadway.

Draw Spans

West Half: "Lift draw" type – replaced original "bulge/double draw" span in 1982.

East Half: "Bulge/double draw" type; original construction including a 471 foot pontoon.

Total Length: 600 feet – designed to allow 600 feet width for marine transportation use.

Buildings

Draw Span Control Towers: All the controls for operating the draw spans are in the west tower, which was built in 1982 on the south side of the west draw span. The east control tower was built in 1961 and is now used primarily for storage.

Generator Building: Constructed in 1982, on the north side of the east draw span.

Storage Building: Constructed in 1982, on the north side of the west draw span

Machinery Buildings: Four small buildings, two on each side of the west draw span, constructed in 1982.

Anchors

West Half: 24 anchors, each weighing from 685 to 1,875 tons.

East Half: 18 anchors, each weighing 530 tons.

Anchor Cables

West Half: 3 inch diameter.

East Half: 1.75 inch diameter.

Proposed Action

The Washington State Department of Transportation (WSDOT) proposes the following improvements to the Hood Canal Bridge:

- **East Half Floating Structure** – The existing east half structures and pontoons will be dismantled. A new east half floating structure will be constructed on fourteen new pontoons and three pontoons currently in storage. The new structure will support two 12-foot lanes and 8-foot shoulders. However, the new and rehabilitated pontoons will have the capability of supporting four lanes of traffic, when needed in the future. The existing east half pontoons are not capable of supporting additional traffic lanes.
- **Floating Bridge Anchors** – Twenty new anchors will be set to anchor the new structure. Anchor will be laid on the bottom to hold the structure in place.
- **East and West Approach Spans** – The east and west approach spans will be replaced on new piers. Steel girders will be replaced with concrete girders.
- **Widening the West Half** – The superstructure of the west half of the bridge will be widened to accommodate a wider roadway. Existing pontoons will be retained.
- **East and West Steel Truss Transition Spans** – These structures will be removed and replaced.
- **West Drawspan**. The first floor of the drawspan tower would be expanded to accommodate a new larger generator. Also, the drawspan superstructure would be widened from 30 feet to 40 feet wide.
- **East Drawspan**. The drawspan, tower, superstructure, and machinery that moves the drawspan will be removed and replaced.

Section 4(f) Property

The Washington State Historic Preservation Officer (SHPO) has determined that the floating portion of the entire bridge (both the east half and west half) is eligible for inclusion in the National Register of Historic Places. The bridge meets the threshold of exceptional significance established by Criteria Consideration G for properties not yet 50 years of age, recognizing that the older eastern half of the bridge is 40 years of age.

Applicability

This project meets all the following criteria for the programmatic evaluation:

1. The Hood Canal Bridge is to be replaced using federal funds.
2. The east half and west half floating portion have been determined to be eligible for listing on the National Register of Historic Places.
3. The Hood Canal Bridge is not a National Historic Landmark.

4(f) Historical Property Evaluation

4. The FHWA Division Administrator has determined that the facts of this project match those set forth in the sections of the document labeled Alternatives, Findings, and Mitigation.
5. Agreement among the FHWA and the SHPO has been reached through procedures pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966. FHWA has notified the Advisory Council on Historic Preservation (Council) of the adverse effect and invited the Council's participation in the project. Council declined to participate in the process. WSDOT has concurred on the agreement.

Alternatives

The following alternatives avoid the use of the historic bridge.

1. Do nothing.
2. Build a new structure at a different location without affecting the historic integrity of the old bridge, as determined by procedures implementing the NHPA.
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the NHPA.

Findings

1. Do Nothing.

The Hood Canal Bridge is located in a severe marine environment. It is subject to high tidal fluctuations, currents, and storm driven sea waves. The east half pontoons were not designed to take the forces that sank the west half in 1979. The do nothing alternative, with routine maintenance, would not resolve the continuing deterioration of the east half pontoons. The east half of the Hood Canal Bridge would become increasingly vulnerable to catastrophic sinking in a severe storm as early as 2007.

2. Build On A New Location Without Using The Old Bridge.

Despite problems with the existing bridge location, it remains the best site for crossing Hood Canal. Engineering and environmental considerations require that the new bridge components be replaced in the current location. These considerations include:

- Building at a new location would be imprudent, unfeasible, impractical and expensive because only half of the structure is being replaced. The existing west half meets current design standards and would have to be replicated. Building a new bridge at a new location would be at least twice as expensive as the proposed project. The only advantage over the proposed project is that the six to eight week bridge closure period would be avoided.

- The Hood Canal Bridge is located in a severe marine environment. Maintaining a second bridge would be very expensive and serve little purpose.
- Construction of a new bridge would have more severe environmental impacts than the proposed project. There would also be numerous residential displacements and traffic conflicts. Many observers would also find that two bridges are visually intrusive in this rural location.
- The existing East Half Hood Canal Bridge would still be likely to sink in a severe storm and the structure would still not be preserved. In time the marine environment will cause fatal deterioration. Breakaway pontoons could cause a safety hazard to shipping and possibly even damage the new bridge.
- The US Navy stated that they do not want to have two bridges crossing Hood Canal. This would cause unnecessary navigational problems and possible closure. Ships navigating through the Hood Canal would have to negotiate two drawspans, often in foggy or inclement weather. Maintaining two drawspans would be difficult and expensive.

3. Rehabilitation Without Affecting the Historic Integrity of the Bridge

It is not feasible and prudent to avoid the use of the Section 4(f) property by rehabilitation. This idea was investigated by a 1997 Washington State Department of Transportation bridge study as a means of extending service life by 20 years. Rehabilitation would:

- Mitigate the effects of progressive deterioration to the maximum extent possible.
- Attempt to correct the mechanical and electrical problems causing poor reliability of the draw span operations.
- Would not significantly reduce the risk of storm damage, with the possible exception of improvements to anchor-cable system capacities.

Improvements would include improving the strength of pontoons by crack sealing, bolting connections, and deck rehabilitation. The superstructure would be strengthened by the use of improved rails, expansion joints, roadway deck overlay, and girder beam upgrades. The drawspan would have an electrical and mechanical overhaul.

These improvements were estimated to cost \$64,150,000 in 1997. The rehabilitation proposal had two fatal flaws that ruled it out from further consideration.

1. The east-half of the bridge would still be subject to sinking in certain types of severe storms.
2. The east-half pontoons do not have the carrying capacity to provide for an expanded roadway needed for safety.

4(f) Historical Property Evaluation

Measures to Minimize Harm

All prudent measures have been considered to minimize harm and to provide necessary mitigation of Section 4(f) property as detailed below:

1. **HAER Documentation**

Documentation of the Hood Canal Bridge will be completed in accordance with the Historic American Engineering Record (HAER) standards. WSDOT will consult with SHPO regarding appropriate documentation to achieve HAER standards, including current view and historic photographs, reproduction of existing engineering drawings, and historical text.

2. **Public Information**

WSDOT will consult with SHPO and interested parties regarding the development of a public education component of the mitigation package. Components may include an interpretive display, a publication or brochure, a video history, or other medium, not to exceed \$25,000 total cost for all items.

3. **Time-lapse Photography**

The process of retrofitting the Hood Canal Bridge will be recorded on videotape and time-lapse photography, thereby creating a visual record of the project.

4. **Agreement between SHPO and FHWA** has been reached through the Section 106 process of the NHPA, and a Memorandum of Agreement (MOA) has been signed which details measures to minimize harm. Those measures are incorporated into the project.

Conclusion

There are no feasible and prudent alternatives to the use of the Hood Canal Bridge. WSDOT has considered all prudent measures to minimize harm and to provide necessary mitigation for the Section 4(f) property. The enclosed MOA evidences that the requirements of Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)) have been satisfied.

Enclosure and Reference:

1. Memorandum of Agreement between SHPO and FHWA

MEMORANDUM OF AGREEMENT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION AND THE
WASHINGTON STATE HISTORIC PRESERVATION OFFICER
PURSUANT TO 36 CFR Part 800.6(a)

WHEREAS, the US Department of Transportation, Federal Highway Administration (FHWA) has provided financial assistance to the Washington State Department of Transportation (WSDOT) for replacement of the East Half (No. 104/5.2) Hood Canal Bridge and the renovation of the West Half (No. 104.5.1) Bridge, located in Kitsap and Jefferson Counties, Washington, Federal Aid Project No. BR-0104(025); and

WHEREAS, the Washington State Historic Preservation Officer (SHPO) and WSDOT have concurred that the floating portions of the entire bridge (both halves) are eligible for inclusion in the National Register of Historic Places; and

WHEREAS, FHWA has determined that retrofitting the West Half and replacing the East Half of the Hood Canal Bridge will have an adverse effect upon this historic property; and

WHEREAS, FHWA has notified the Advisory Council on Historic Preservation (Advisory Council) of the adverse effect and invited the Council's participation in the project, pursuant to 36 CFR 800.6(a)(1); and

WHEREAS, the Advisory Council has declined to participate, but requests that pursuant to 36 CFR 800.6(b)(iv), a Memorandum of Agreement (Agreement), be developed in consultation with the SHPO, and related documentation be filed with the Advisory Council at the conclusion of the consultation process; and

WHEREAS, WSDOT has participated in the consultation and has been invited to concur in this Agreement;

NOW, THEREFORE, FHWA, SHPO, and WSDOT agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on the historic property.

Hood Canal Bridge, MOA
Page 2

STIPULATIONS

FHWA shall ensure that the following measures, which have been agreed upon through consultation among FHWA, WSDOT and SHPO, are carried out:

- 1) Historic Property Recordation:
WSDOT will consult with the SHPO regarding appropriate documentation to Historic American Engineering Record (HAER) standards, including current view and historic photographs, reproduction of existing engineering drawings, and historical text.
- 2) Public Information:
WSDOT will consult with the SHPO and interested parties regarding the development of a public education component of the mitigation package. Components may include an interpretive display, a publication or brochure, a video history, or other medium, not to exceed \$25,000 total cost for all items.
- 3) Time-Lapse Photography:
The process of rehabilitation of the Hood Canal Bridge will be recorded through videotaping and time-lapse photography, thereby creating a visual record of the project.
- 4) Amendment of the Agreement:
If any of the signatories to this Agreement determine that the terms of the Agreement cannot be met or believe a change is necessary, that signatory will immediately request the signatory parties to consider an amendment or addendum which will be executed in the same manner as the original Agreement. A copy of the amended Agreement will be filed with the Council, pursuant to 36 CFR 800.6(c)(7).
- 5) Dispute Resolution:
 - a) If a dispute arises regarding implementation of this Agreement, the signatory parties will consult with the objecting party to resolve the dispute. If FHWA determines that the dispute cannot be resolved, FHWA shall forward all documentation relevant to the dispute to the Advisory Council and request Council comment, which will be provided pursuant to 36 CFR 800.6(b).
 - b) If at any time during implementation of the measures stipulated in this Agreement, should an objection to any such measure or its manner of implementation be raised by a member of the public, the FHWA shall take the objection into account and consult as needed with the objecting party, the SHPO, or the Advisory Council to resolve the objection.

Hood Canal Bridge, MOA
Page 3

6) Failure to Carry Out Terms:

Failure to carry out the terms of this Agreement requires that FHWA again request the Council's comments in accordance with 36 CFR Part 800.7. If FHWA cannot carry out the terms of the Agreement: (i) it will not take or sanction any action to make an irreversible commitment that would result in an adverse effect with respect to the eligible property covered by the Agreement; (ii) nor will FHWA foreclose the Council's consideration of modifications or alternatives that could avoid or mitigate the adverse effect on the property until the commenting process has been completed.

7) Duration & Termination:

If the undertaking described herein is not implemented by 31 December 2008, this agreement shall be terminated and its terms reconsidered.

8) Within 90 Days after carrying out the terms of the Agreement the WSDOT shall report to all signatories on the actions taken.

Execution of this Agreement evidences that FHWA, WSDOT, and SHPO, have afforded the Advisory Council a reasonable opportunity to comment on the replacement and renovation of the Hood Canal Bridge No. 104/5.1 and 104/5.2 and the effects on historic properties; and that the FHWA has taken into account the effect of its undertaking on historic properties pursuant to the requirements of Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)).

Signatories

Steve Saxton 10/10/01
for Daniel Mathis Date
Federal Highway Administration

Allyson Brooks 10/2/01
Allyson Brooks, Ph.D. Date
Washington State Historic Preservation Officer

Concur:

Kenneth M. Stone 10/8/01
Kenneth M. Stone Date
Washington State Department of Transportation

Appendix D

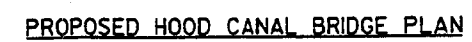
PRELIMINARY PLAN SHEETS

State Route 104

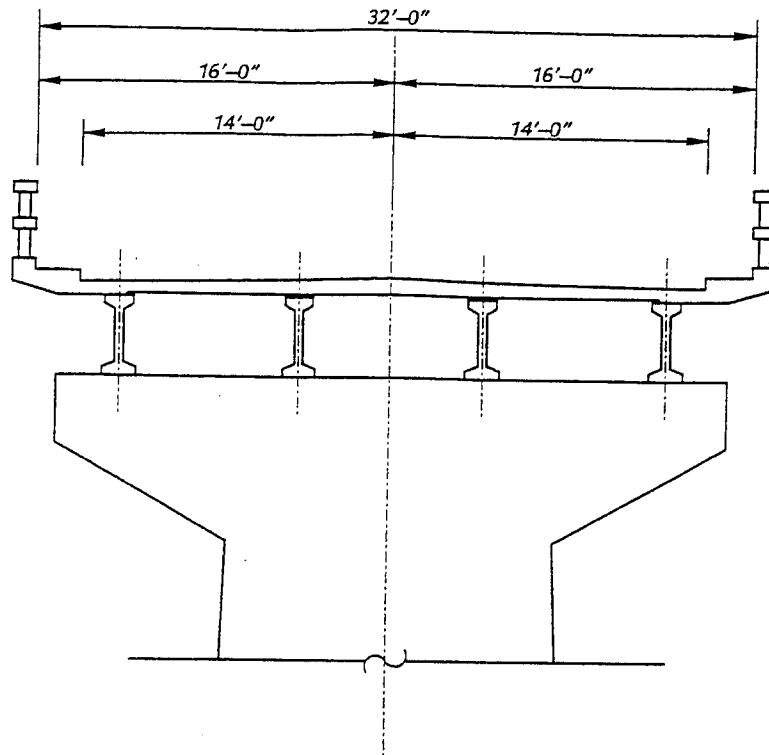
Hood Canal Bridge 104/005.1 (West Half)
104/005.2 (East Half)

Prepared By:
WSDOT Olympic Region

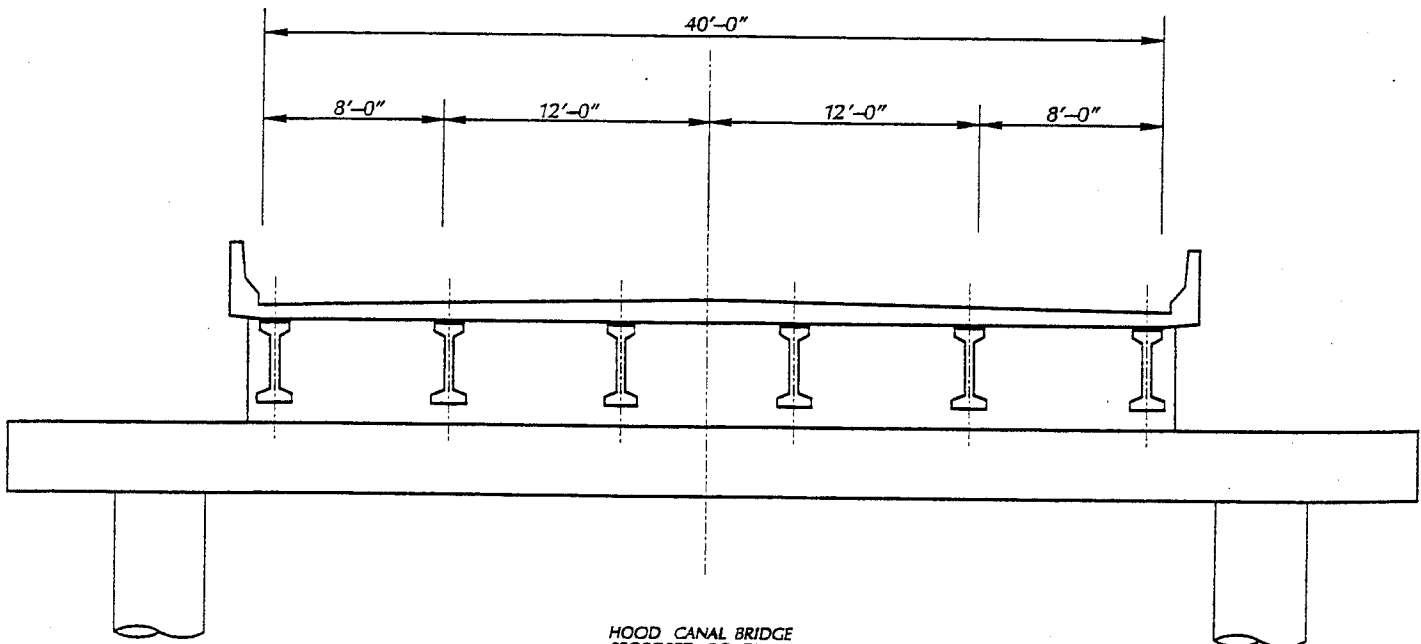
May 2002



SHEET
OF
SHEETS



HOOD CANAL BRIDGE
EXISTING ROADWAY



HOOD CANAL BRIDGE
PROPOSED ROADWAY

SECTION A AT WEST APPROACH SPAN

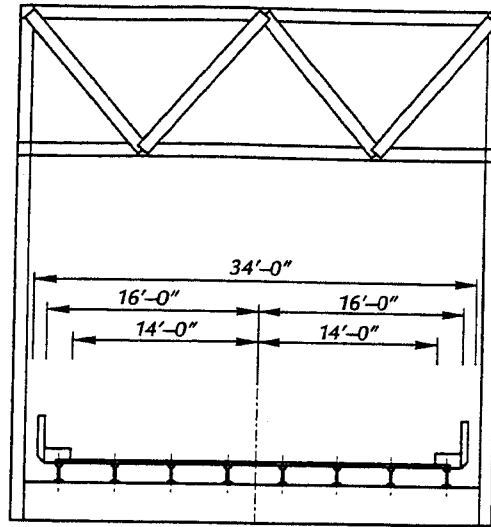
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
SHOWN ON PAGES 2 TO 11.

SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

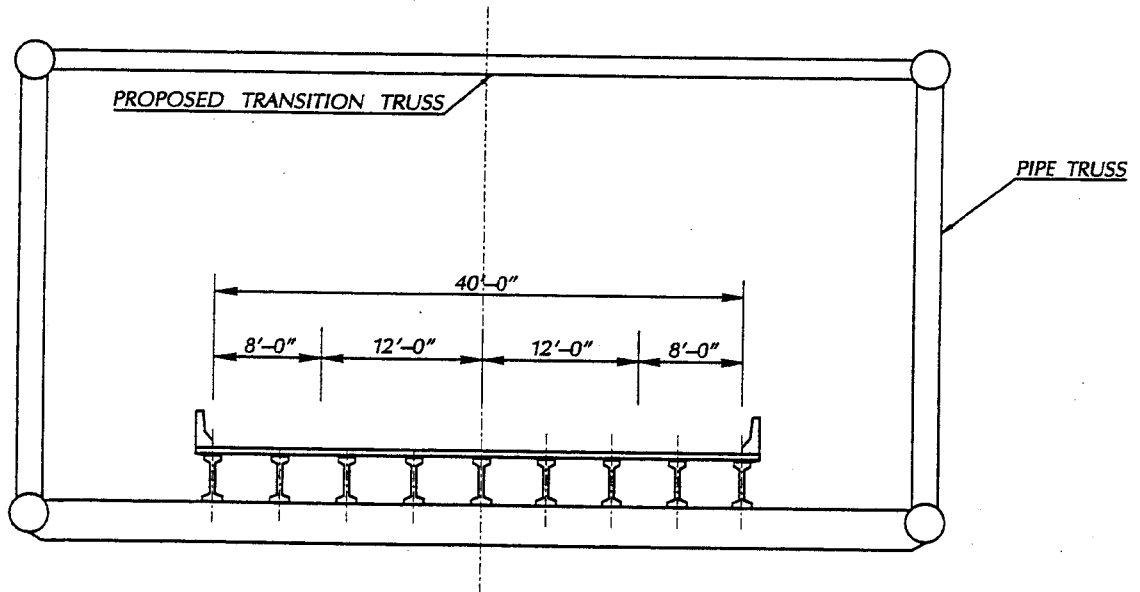
CROSS SECTION

D-2

SHEET
OF
SHEETS



HOOD CANAL BRIDGE
EXISTING ROADWAY



HOOD CANAL BRIDGE
PROPOSED ROADWAY

SECTION B AT TRANSITION SPAN

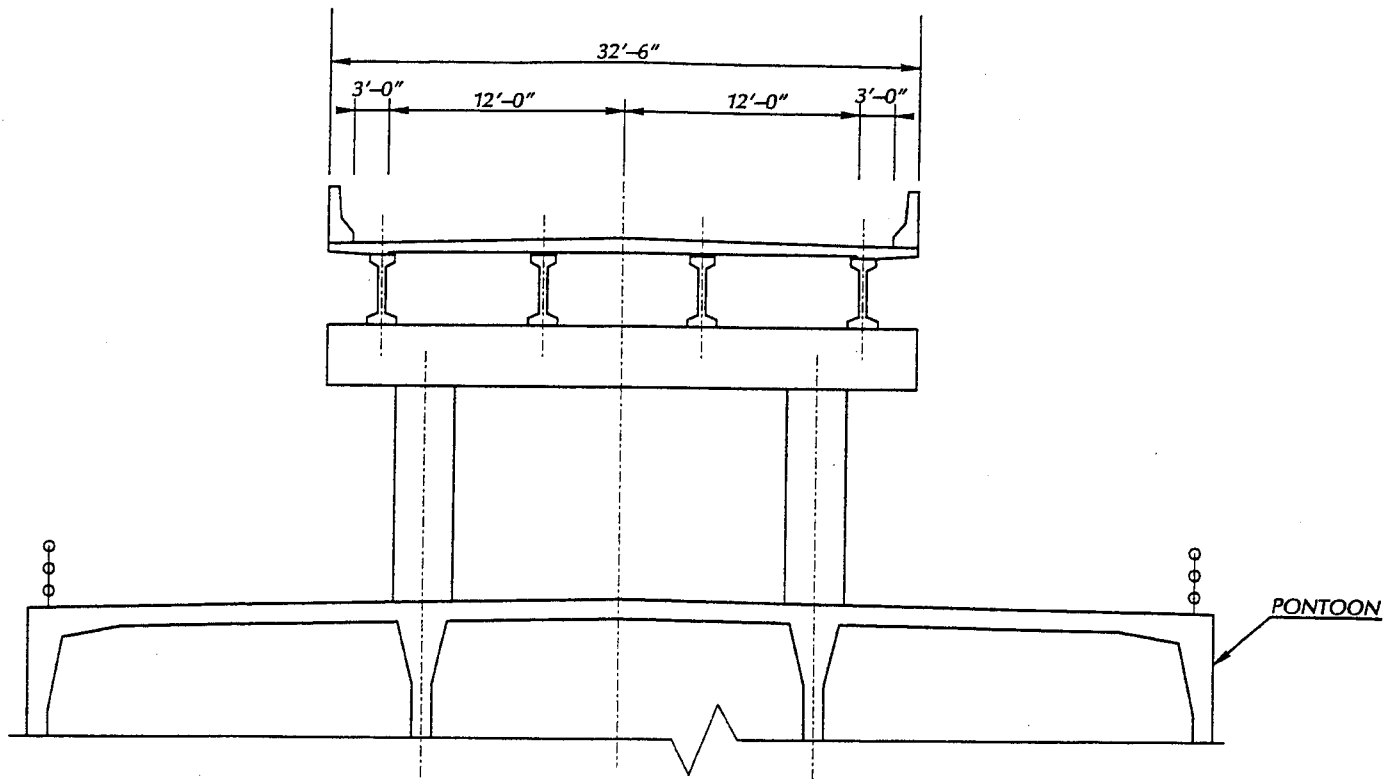
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
SHOWN ON PAGES 2 TO 11.

SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

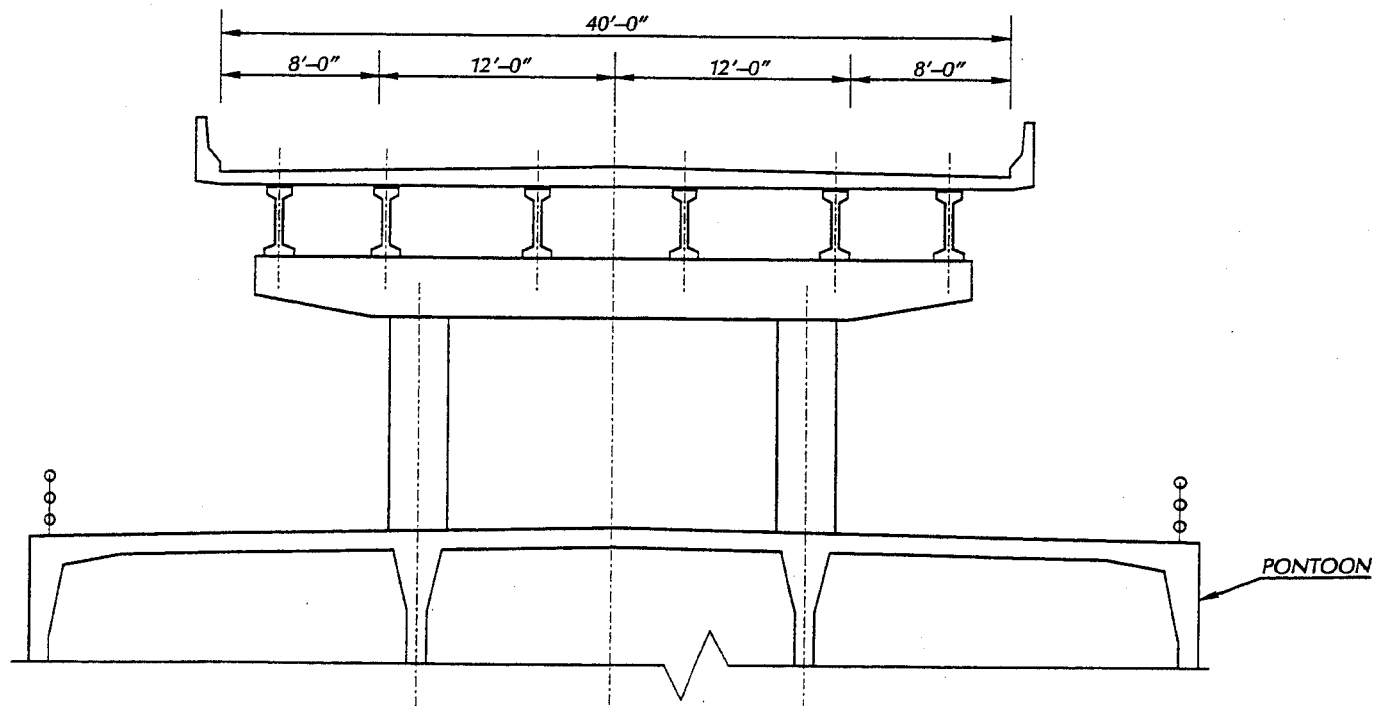
CROSS SECTION

D-3

SHEET
OF
SHEETS



HOOD CANAL BRIDGE
EXISTING ROADWAY



HOOD CANAL BRIDGE
PROPOSED ROADWAY

SECTION C

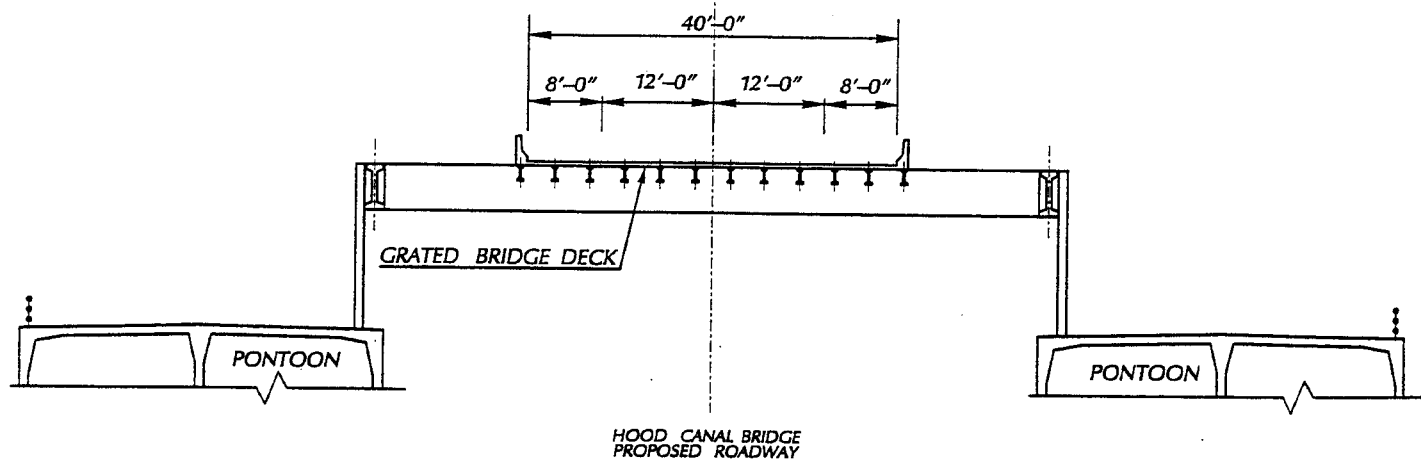
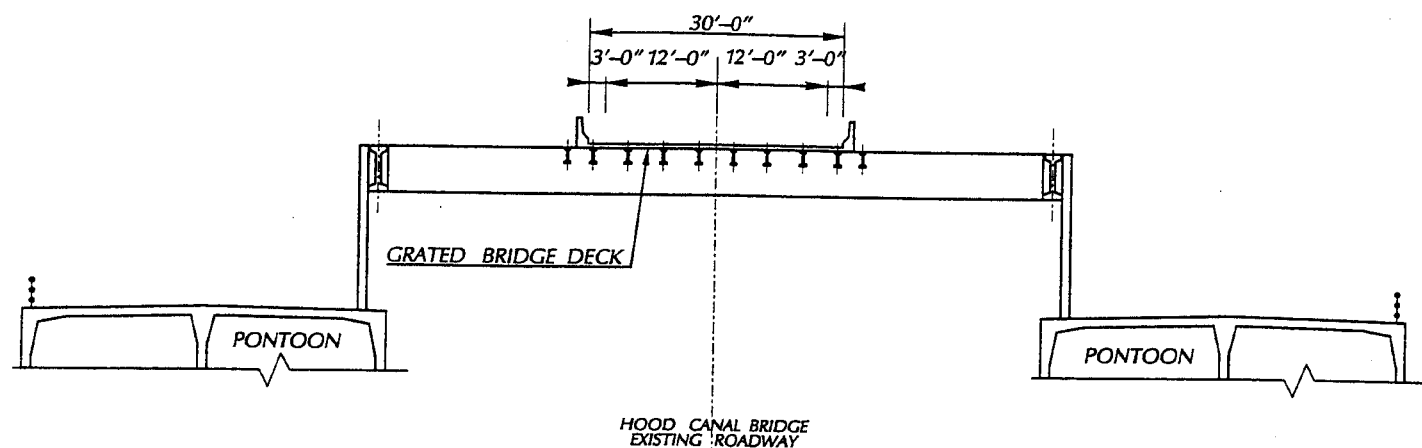
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
SHOWN ON PAGES 2 TO 11.

SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

CROSS SECTION

D-4

SHEET
OF
SHEETS



SECTION D AT WEST DRAW SPAN

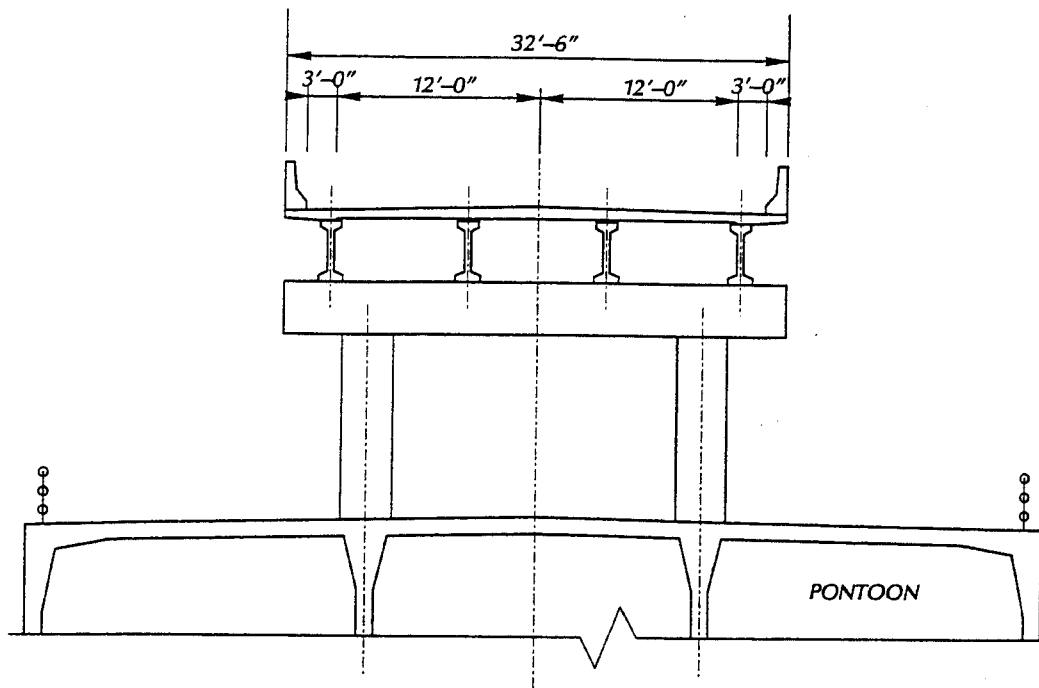
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
SHOWN ON PAGES 2 TO 11.

SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

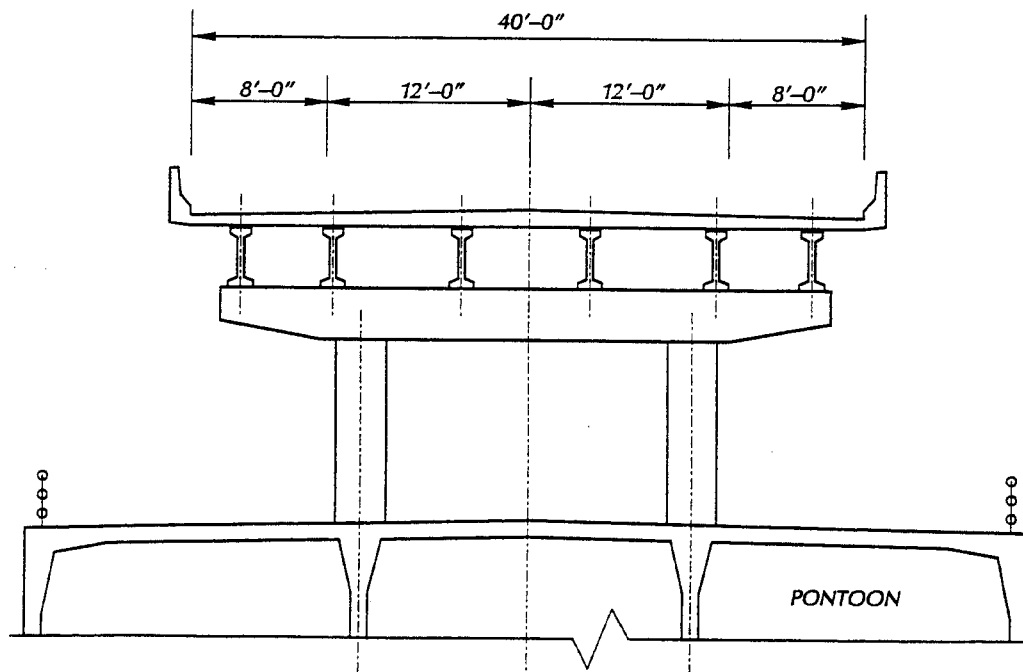
CROSS SECTION

D-5

SHEET
OF
SHEETS



HOOD CANAL BRIDGE
EXISTING ROADWAY



HOOD CANAL BRIDGE
PROPOSED ROADWAY

SECTION E AT WEST DRAW SECTION

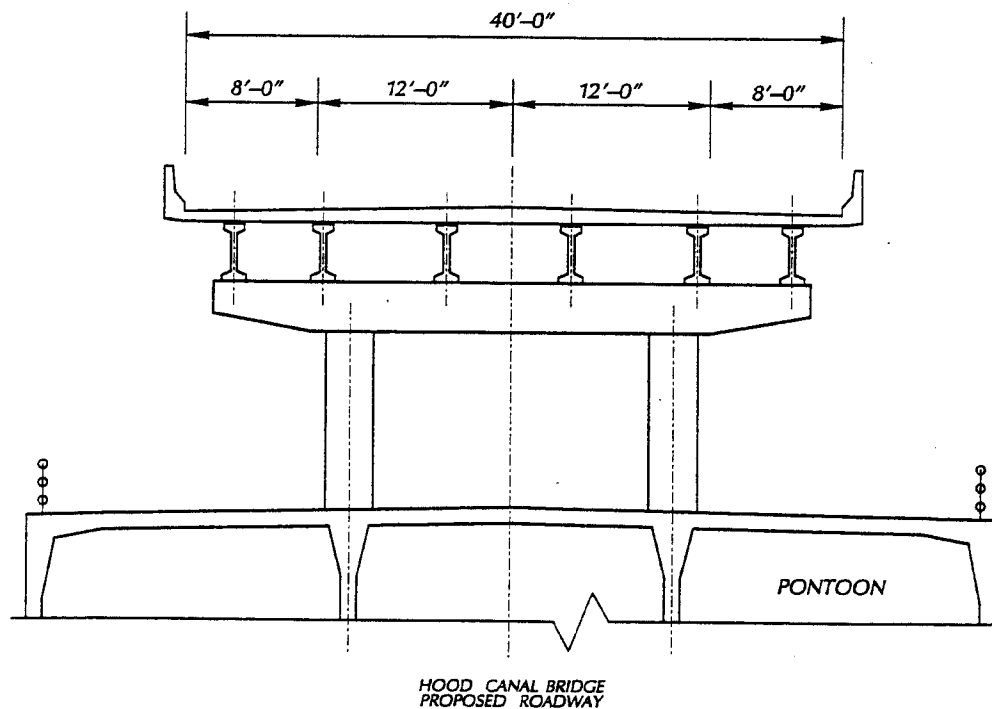
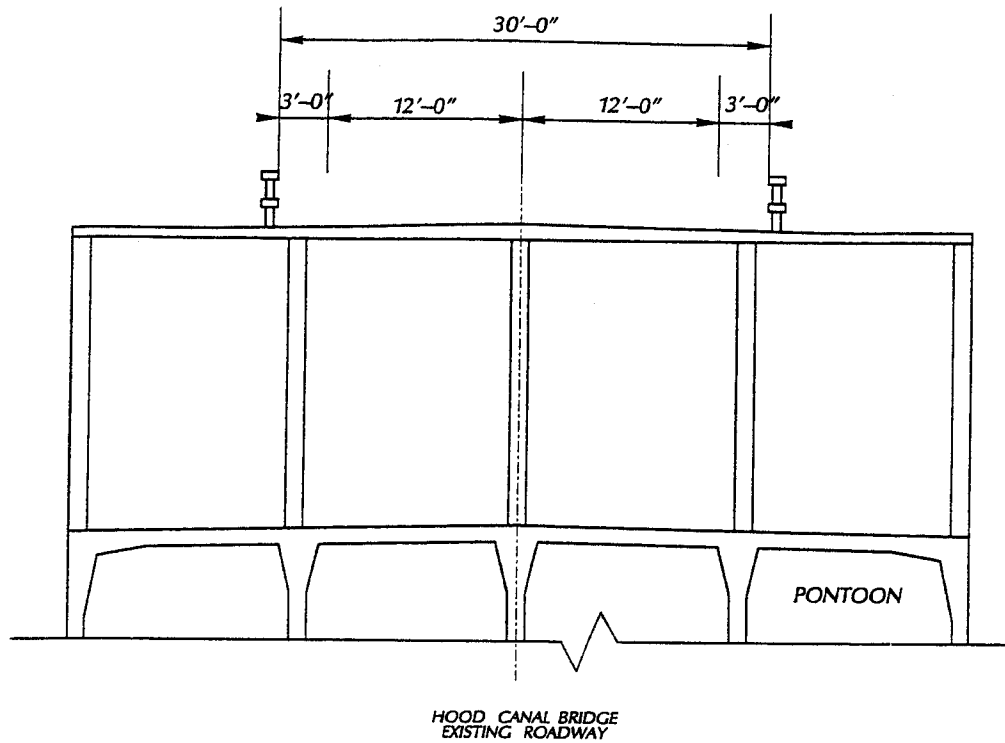
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
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SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

CROSS SECTION

D-6

SHEET
OF
SHEETS



SECTION F AT EAST DRAW SECTION

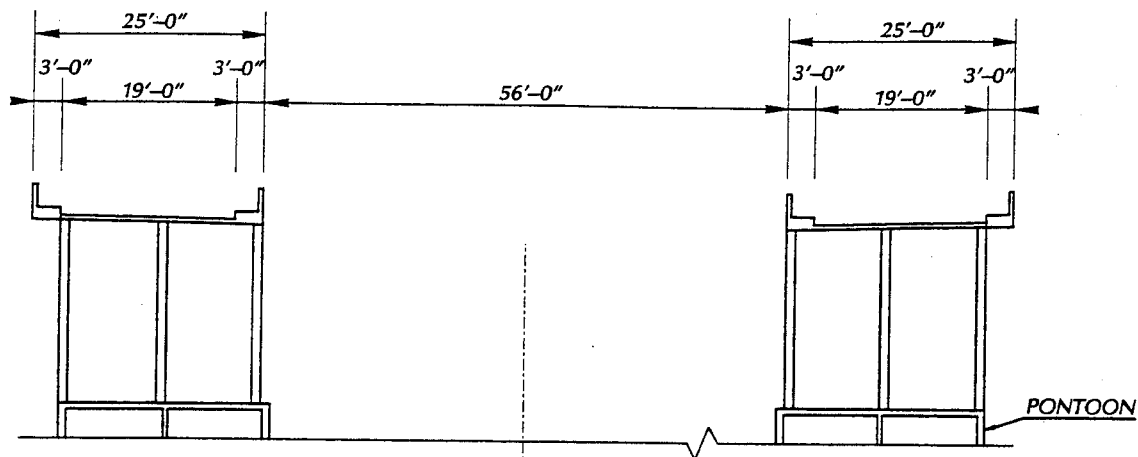
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
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SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

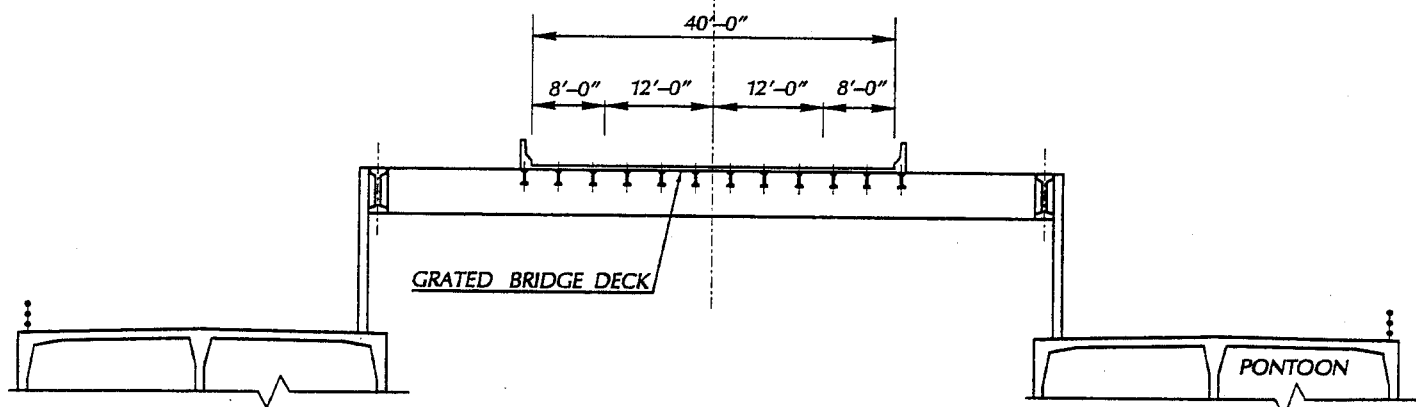
CROSS SECTION

D-7

SHEET
OF
SHEETS



HOOD CANAL BRIDGE
EXISTING ROADWAY



HOOD CANAL BRIDGE
PROPOSED ROADWAY

SECTION G AT EAST DRAW SPAN

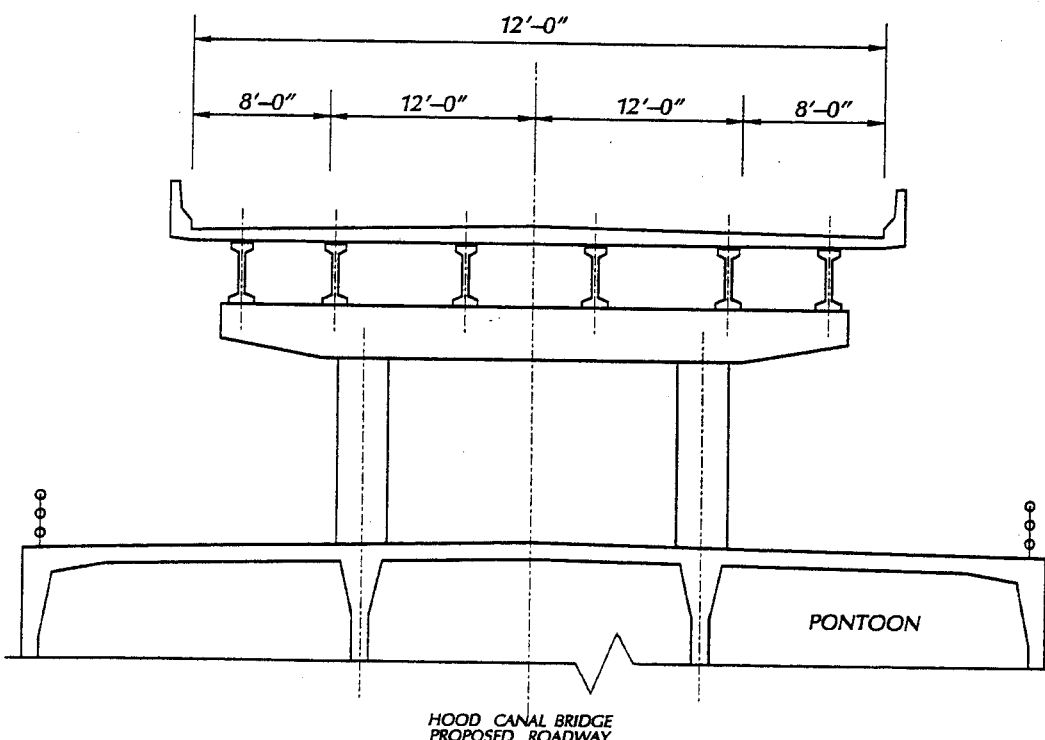
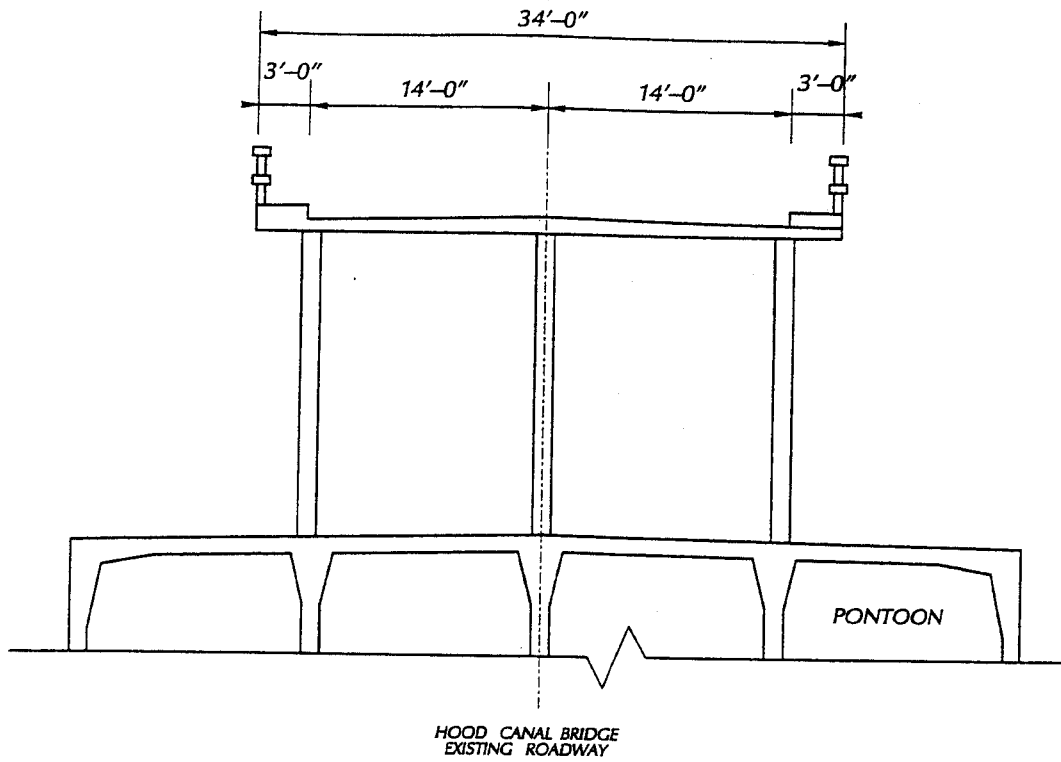
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
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SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

CROSS SECTION

D-8

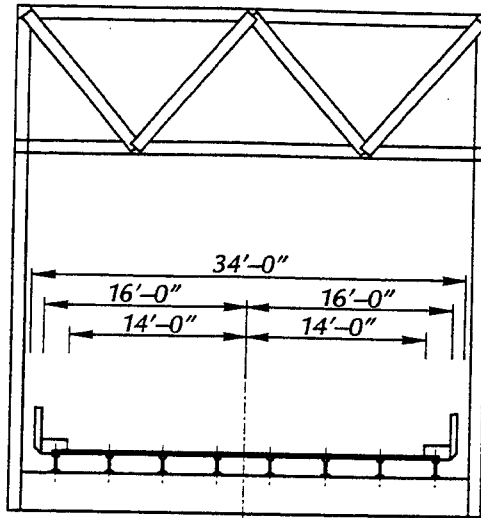
SHEET
OF
SHEETS



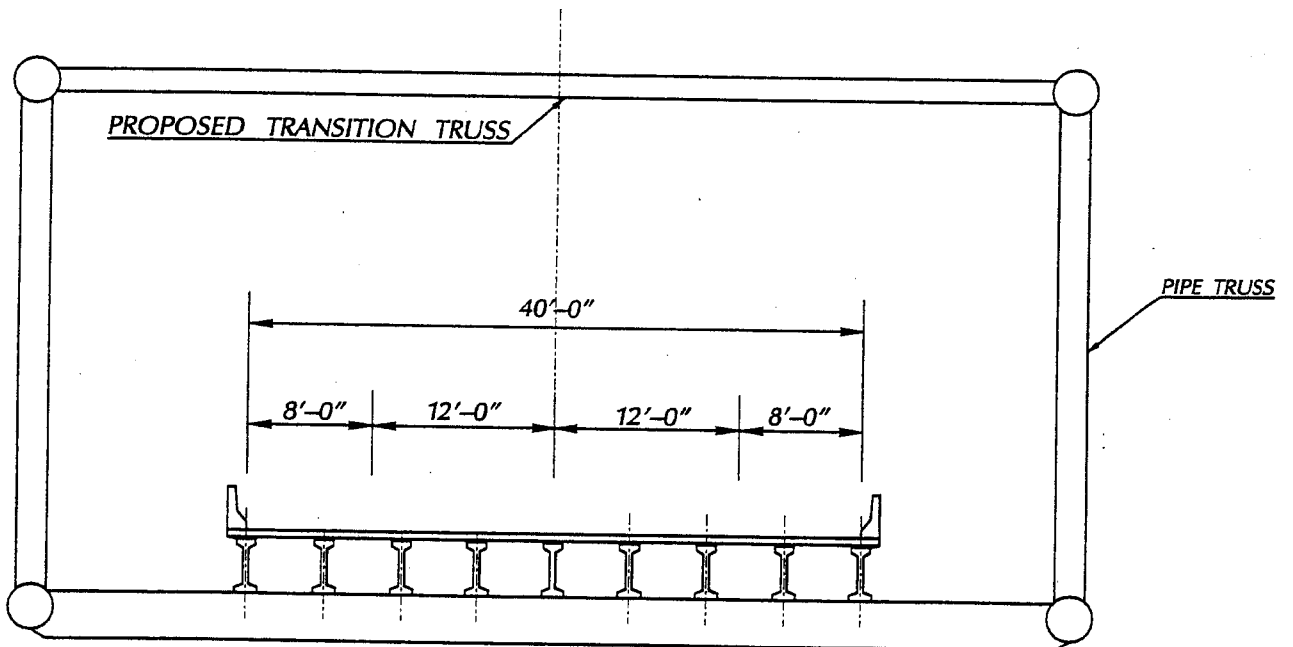
SECTION H BETWEEN TRANSITION AND DRAW SPAN

NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
SHOWN ON PAGES 2 TO 11.

<p>SR 104 HOOD CANAL BRIDGE RETROFIT AND EAST HALF REPLACEMENT</p>	<p>D-9</p>	
	<p>SHEET</p>	<p>OF</p>
	<p>CROSS SECTION</p>	



HOOD CANAL BRIDGE
EXISTING ROADWAY



HOOD CANAL BRIDGE
PROPOSED ROADWAY

SECTION I AT EAST TRANSITION TRUSS

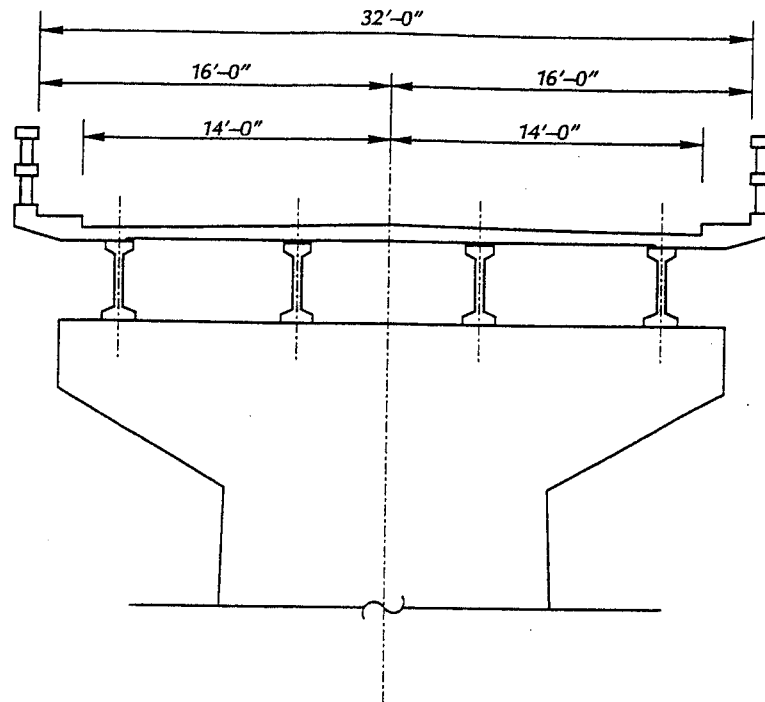
NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
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SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

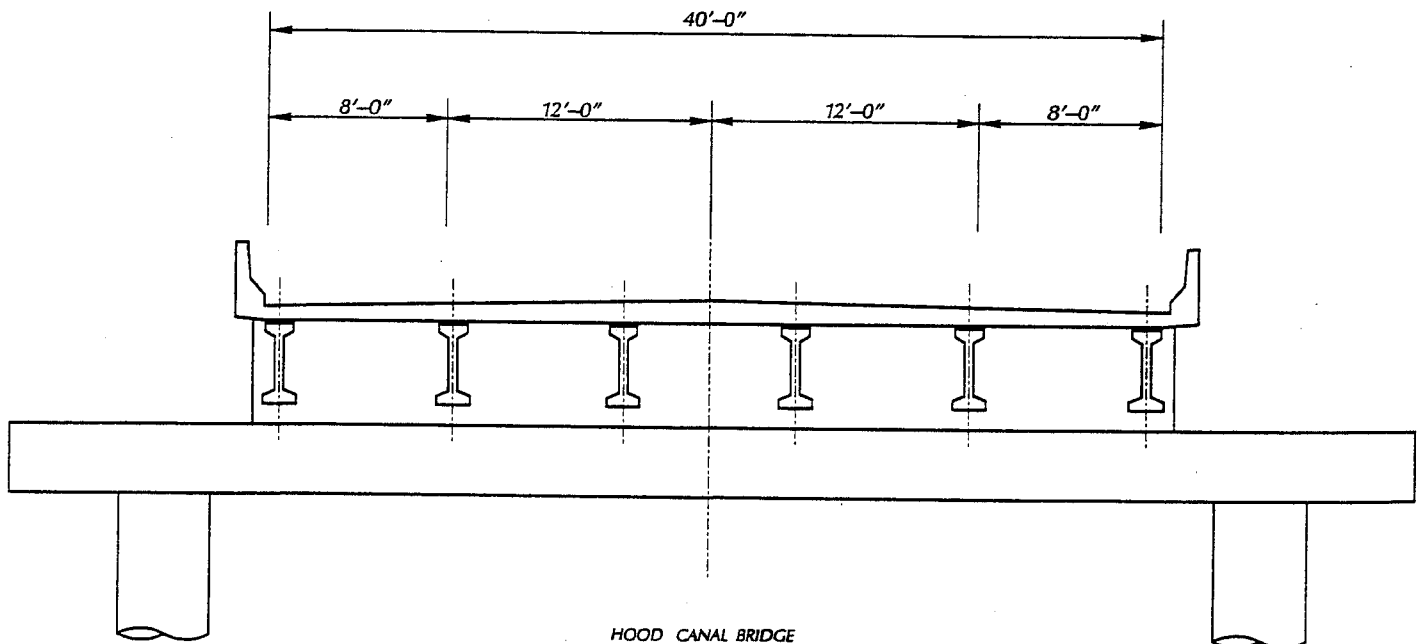
CROSS SECTION

D-10

SHEET
OF
SHEETS



HOOD CANAL BRIDGE
EXISTING ROADWAY



HOOD CANAL BRIDGE
PROPOSED ROADWAY

SECTION J

NOTE: A-J REPRESENT CROSS SECTION AT DIFFERENT LOCATION
SHOWN ON PAGES 2 TO 11.

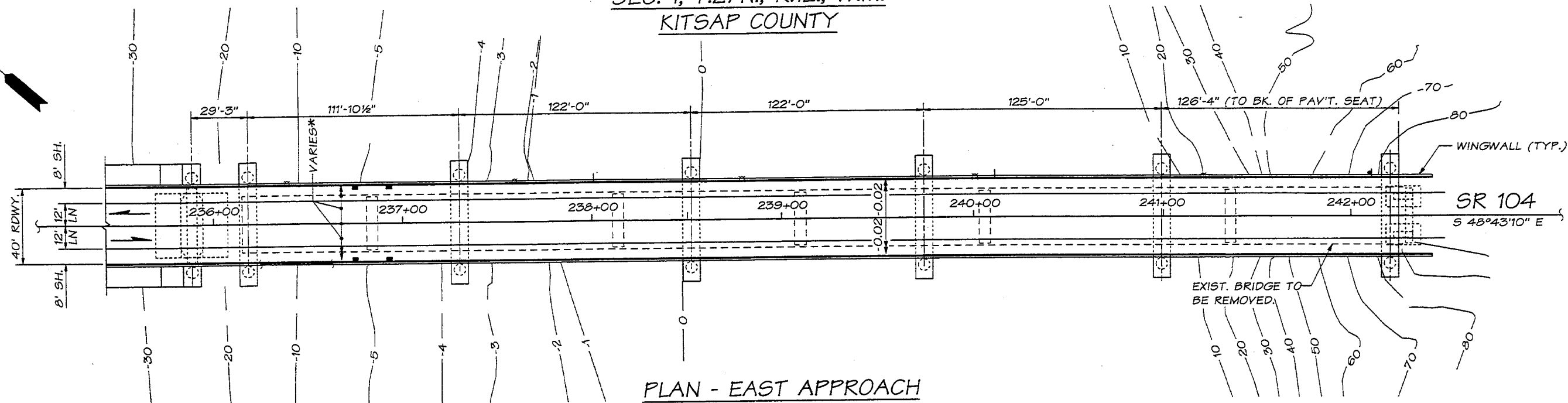
SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

CROSS SECTION

D-11

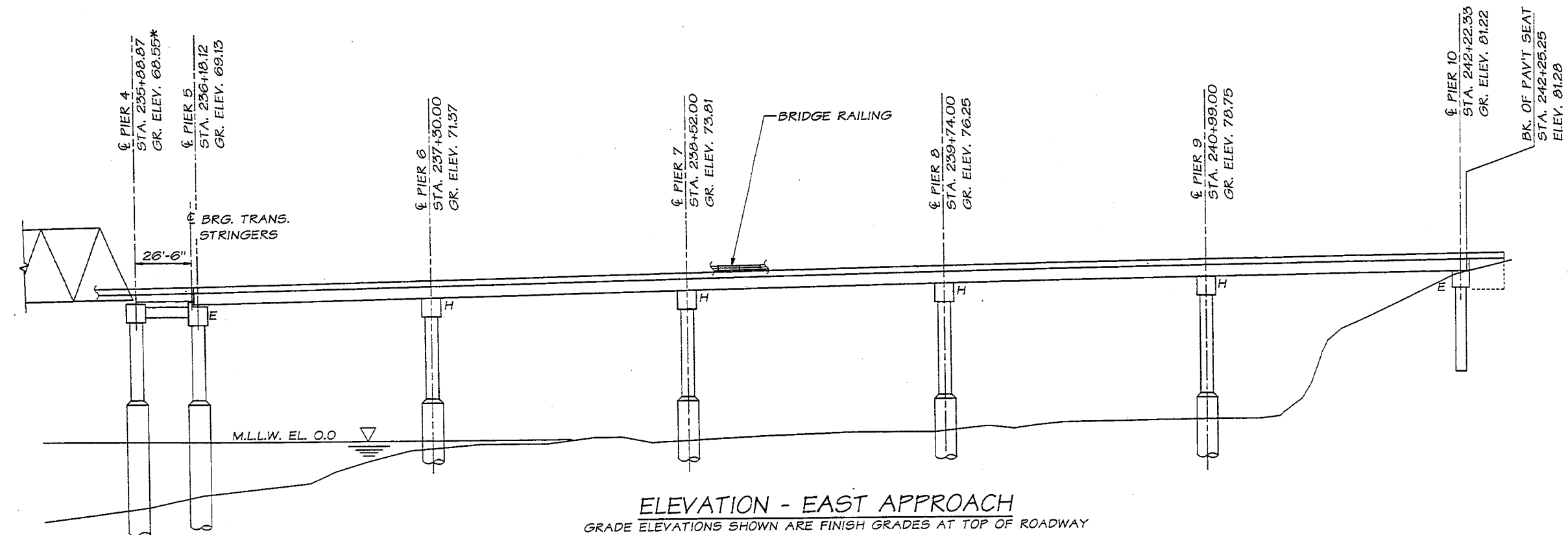
SHEET
OF
SHEETS

SEC. 1, T.27N., R.1E., W.M.
KITSAP COUNTY



PLAN - EAST APPROACH

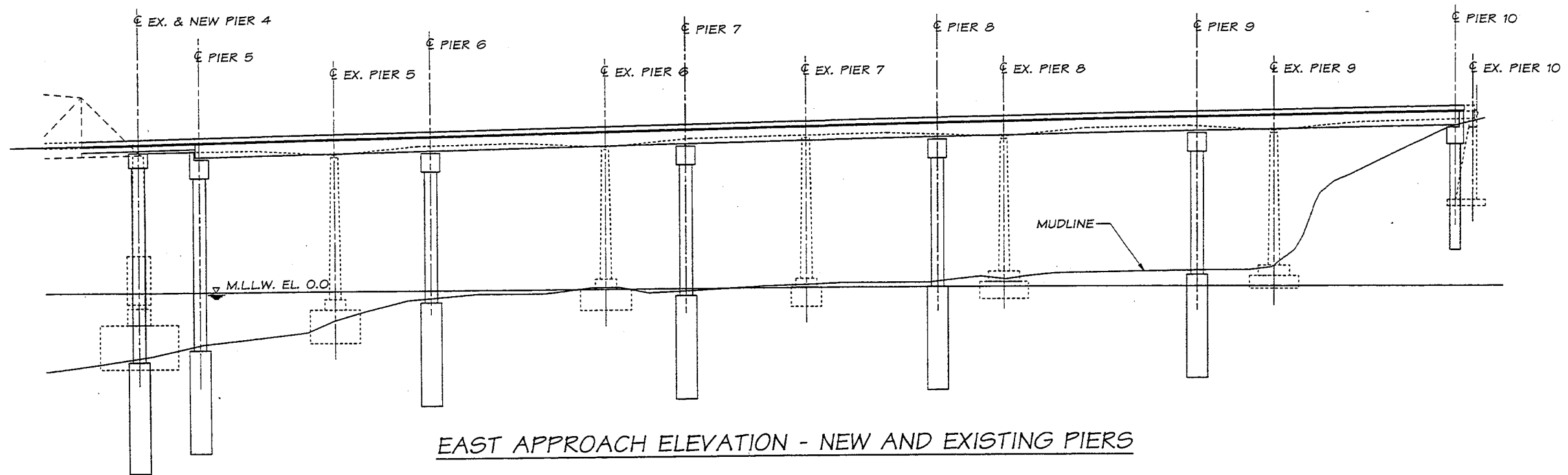
* CROWN VARIES FROM ZERO CROWN AT PIER 5 TO FULL CROWN AT PIER 6.



ELEVATION - EAST APPROACH

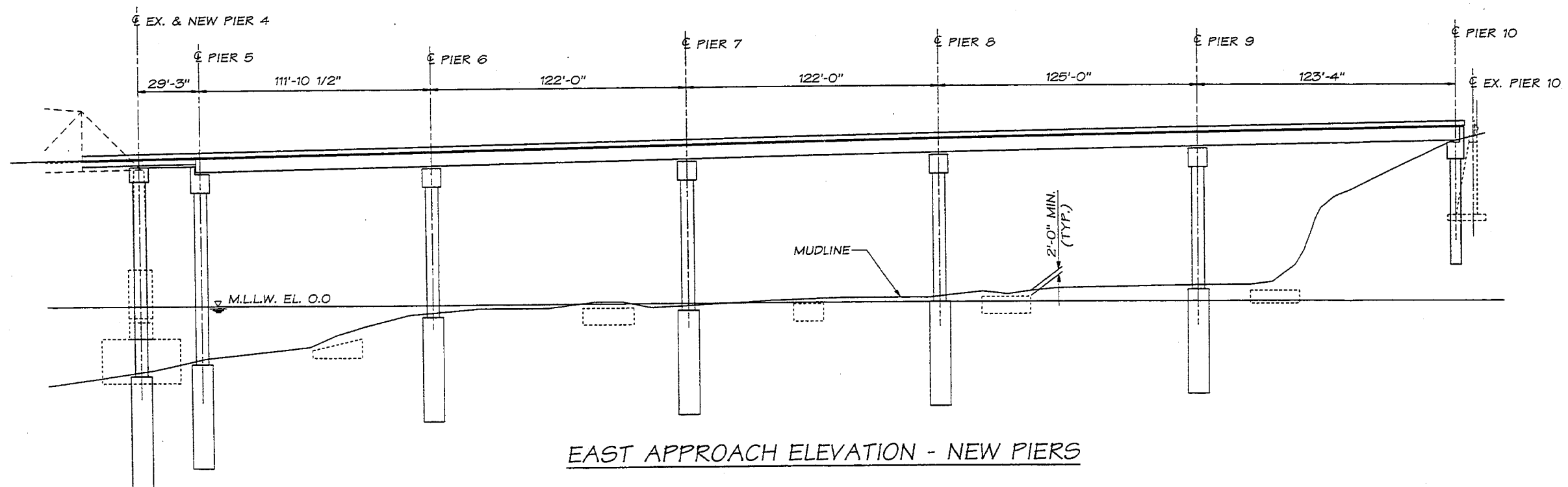
GRADE ELEVATIONS SHOWN ARE FINISH GRADES AT TOP OF ROADWAY SLAB ON SR 104 AND ARE EQUAL TO PROFILE GRADE.

DATUM
NAVD 1988



EAST APPROACH ELEVATION - NEW AND EXISTING PIERS

EXISTING FOOTING TO BE REMOVED 2'-0" BELOW MUDLINE.



EAST APPROACH ELEVATION - NEW PIERS

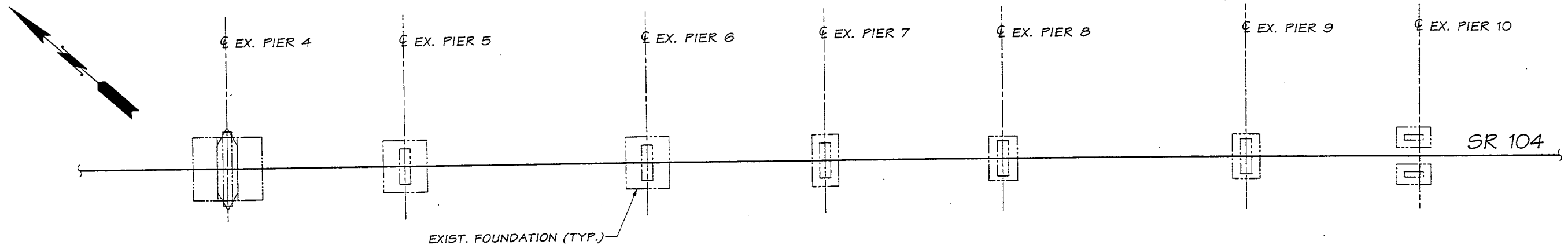


**Washington State
Department of
Transportation**

SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

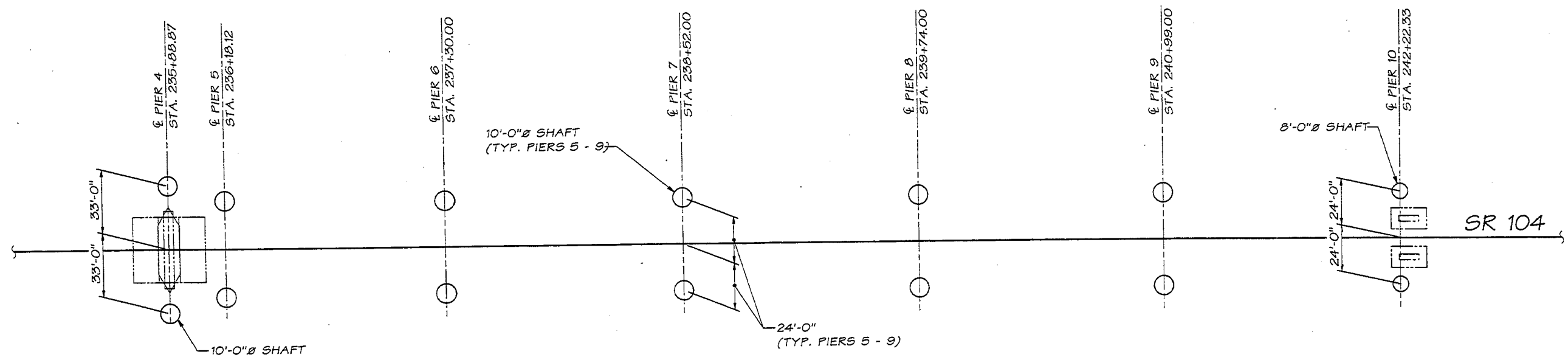
EAST APPROACH
EXISTING AND PROPOSED FOOTING

BRIDGE
SHEET
NO.
D-13
SHEET
OF
SHEETS



EXISTING FOUNDATION PLAN - EAST APPROACH

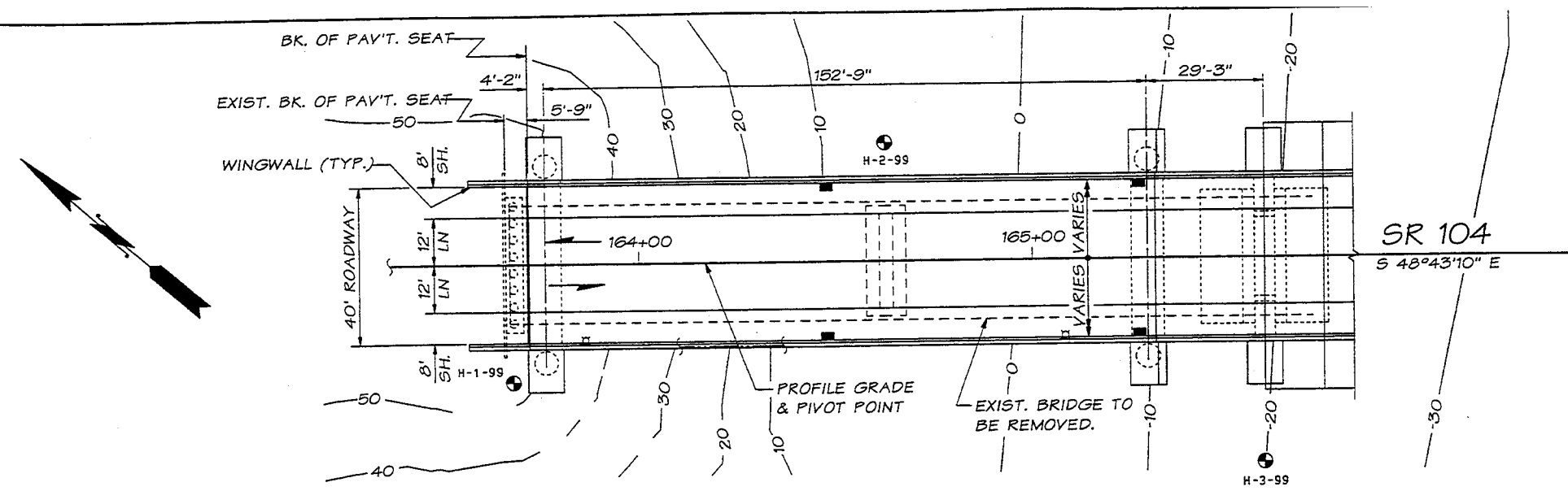
PLAN SHOWS AREA OF EXISTING FOOTING ABOVE MUDLINE.
 PORTION OF PIERS 5-9 FOOTING ARE TO BE REMOVED 2'-0" BELOW MUDLINE.
 AREA REMOVED = 2420 SF.



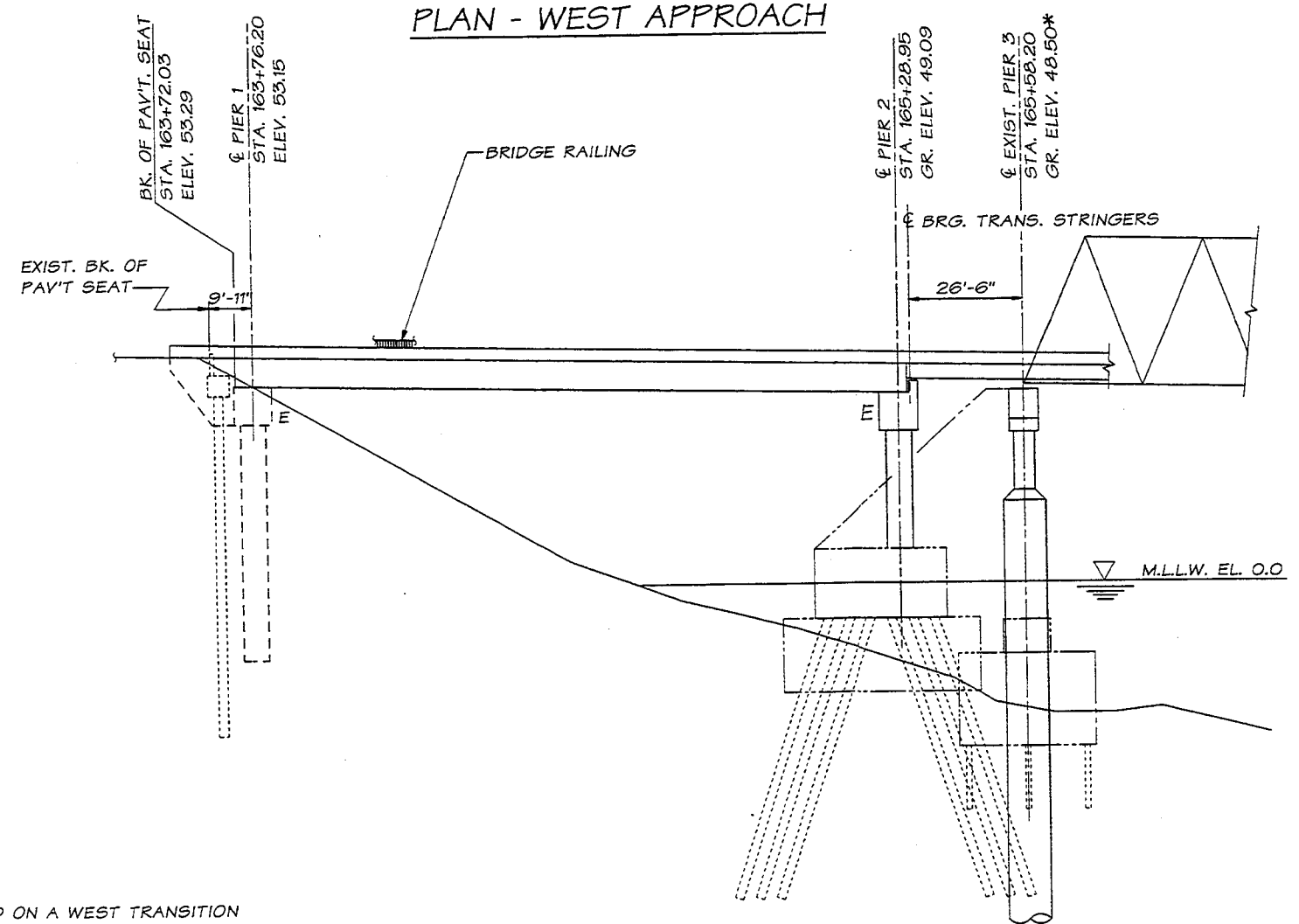
NEW FOUNDATION PLAN - EAST APPROACH

AREA OF NEW SHAFTS IN WATER (PIERS 4-9) = 950 SF.

SEC. 2, T.27N., R.1E., W.M.
JEFFERSON COUNTY



PLAN - WEST APPROACH



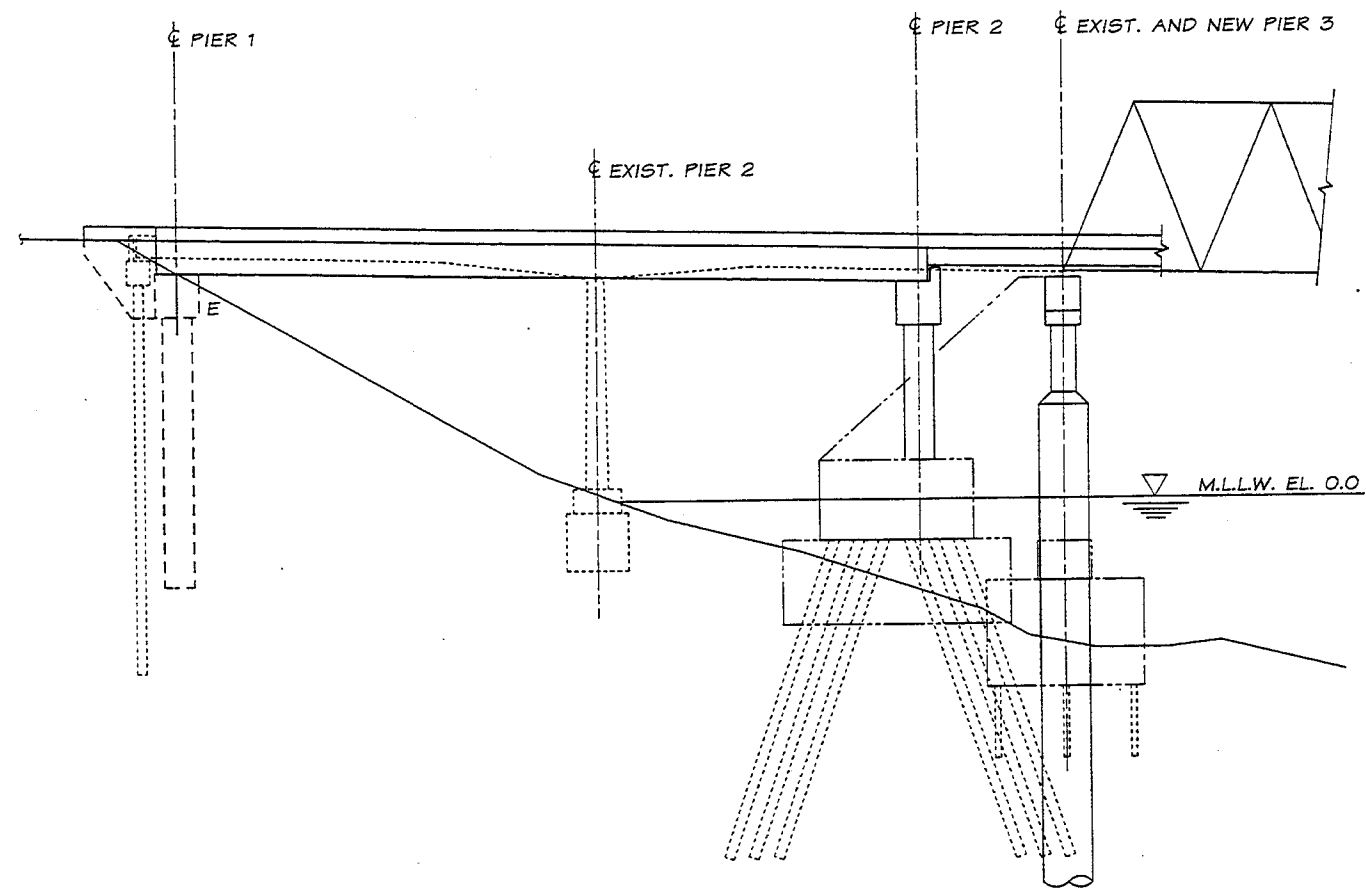
ELEVATION - WEST APPROACH

GRADE ELEVATIONS SHOWN ARE FINISH GRADES AT TOP OF ROADWAY SLAB ON SR 104 AND ARE EQUAL TO PROFILE GRADE.

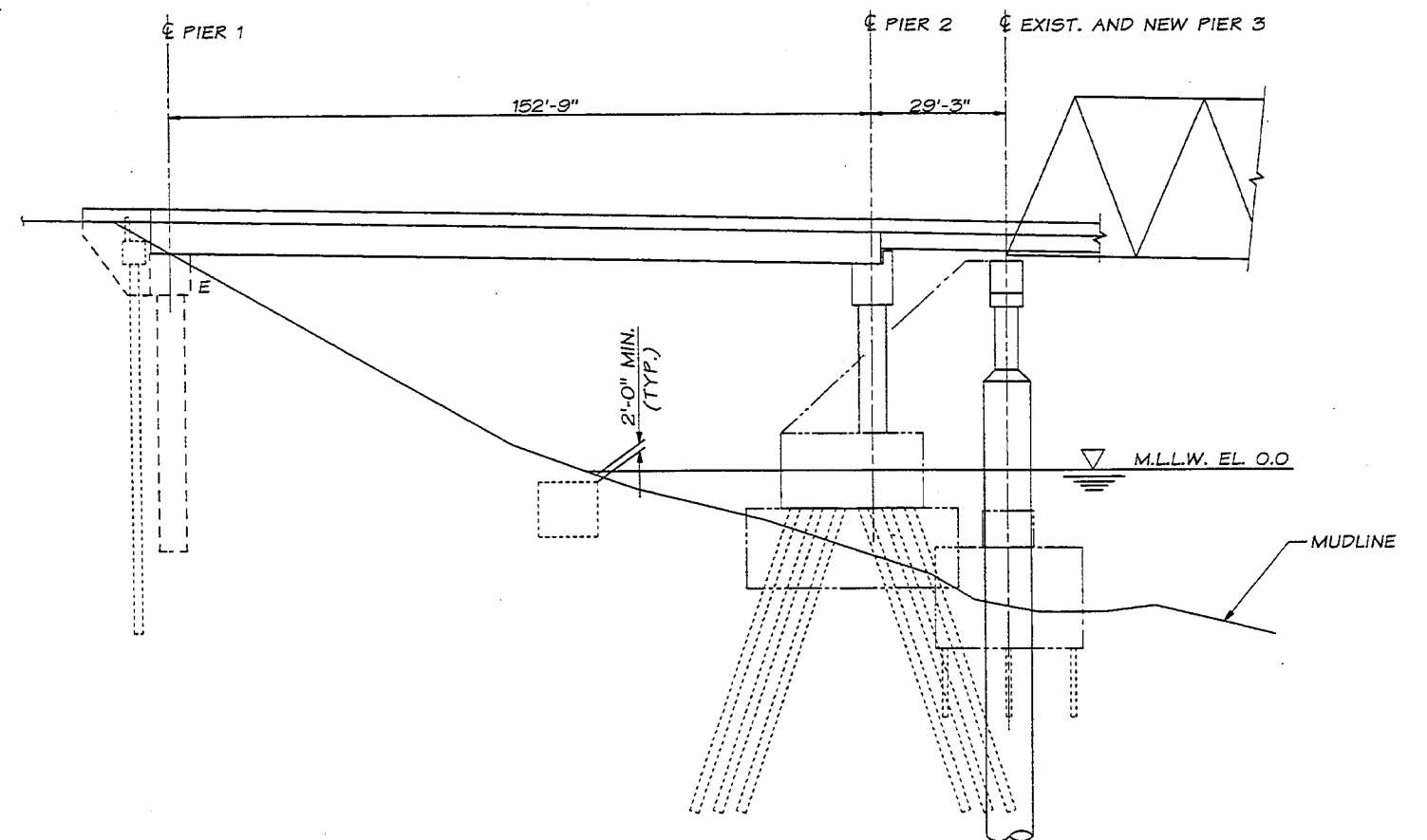
* ELEVATION BASED ON A WEST TRANSITION
SPAN SLOPE OF -2.00%

DATUM
NAVD 1988

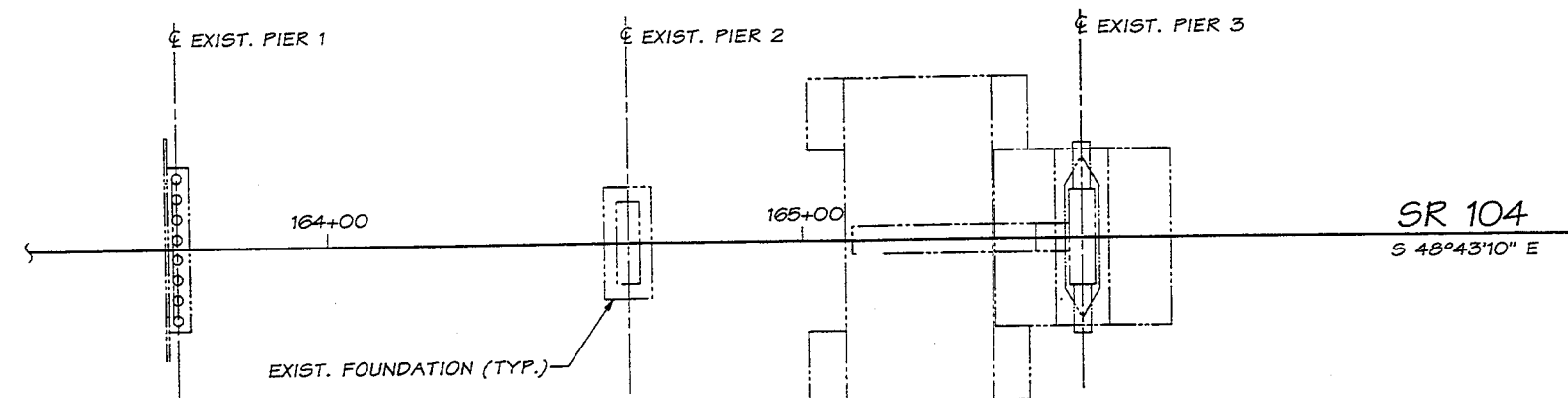
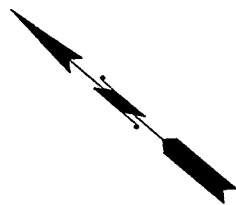
	SR 104		BRIDGE SHEET NO.
	HOOD CANAL BRIDGE RETROFIT AND EAST HALF REPLACEMENT		D-15
	WEST APPROACH		SHEET OF SHEETS



WEST APPROACH ELEVATION - NEW AND EXISTING PIERS
EXISTING FOOTING TO BE REMOVED 2'-0" BELOW MUDLINE.

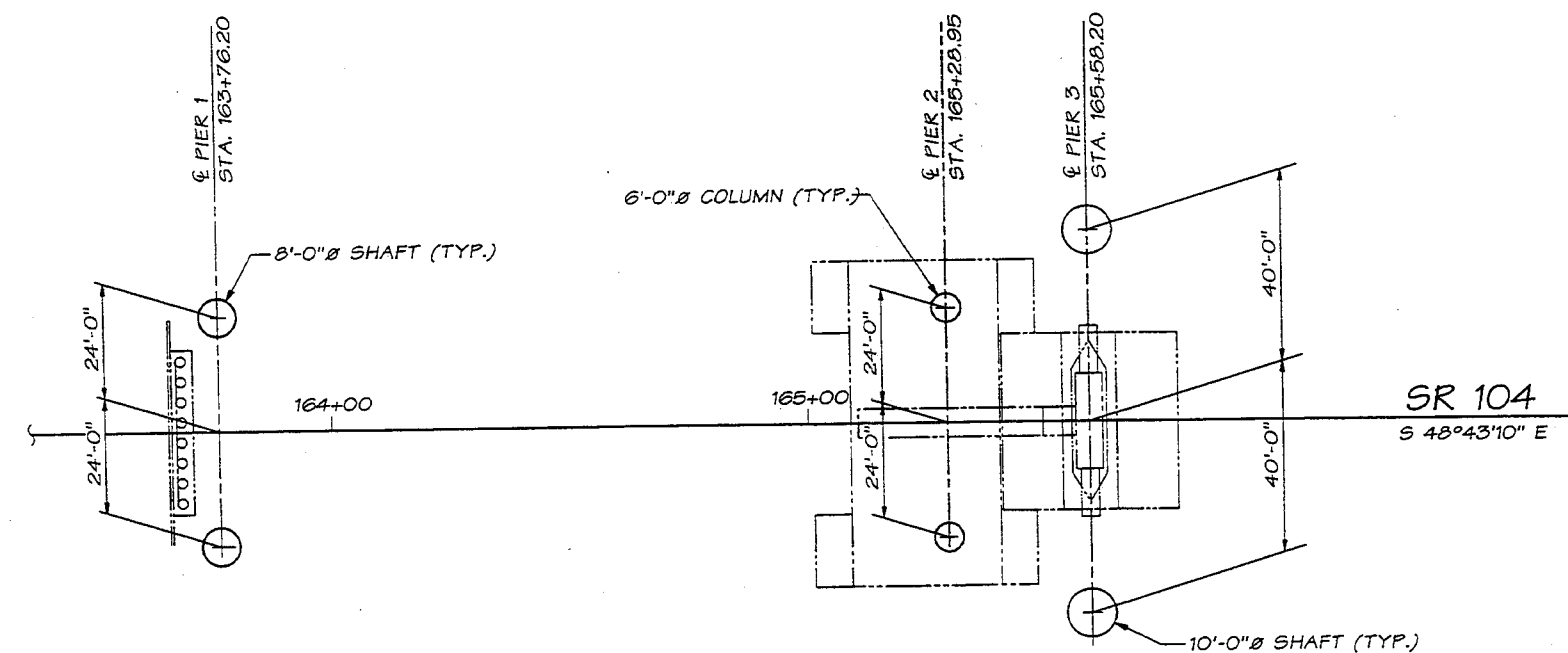


WEST APPROACH ELEVATION - NEW PIERS



FOUNDATION PLAN - WEST APPROACH

PLAN SHOWS AREA OF EXISTING FOOTING ABOVE MUDLINE.
PORTION OF PIER 2 FOOTING IS TO BE REMOVED 2'-0" BELOW MUDLINE.
AREA REMOVED = 235 SF.



FOUNDATION PLAN - WEST APPROACH

AREA OF NEW SHAFTS IN WATER (PIER 3) = 160 SF.



Washington State
Department of
Transportation

SR 104
HOOD CANAL BRIDGE RETROFIT AND
EAST HALF REPLACEMENT

WEST APPROACH
TIDAL LAND IMPACTS

BRIDGE
SHEET
NO.
D-17
SHEET
OF
SHEETS

Appendix E

TRAFFIC MITIGATION PLANS

State Route 104

Hood Canal Bridge 104/005.1 (West Half)
104/005.2 (East Half)

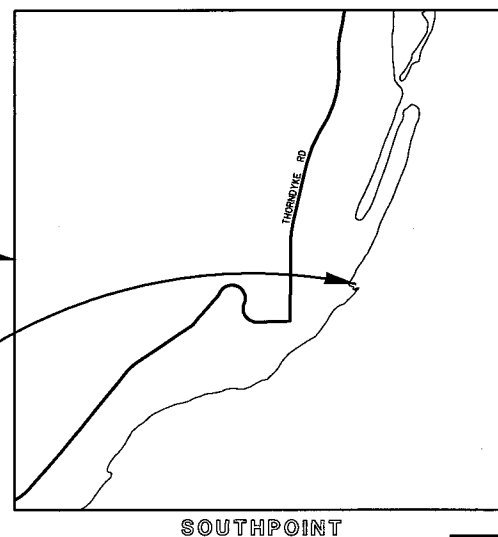
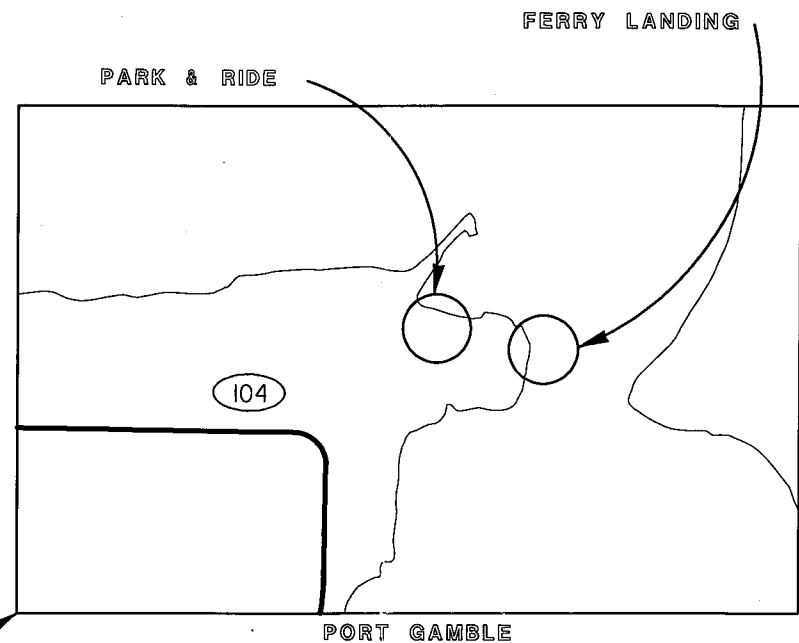
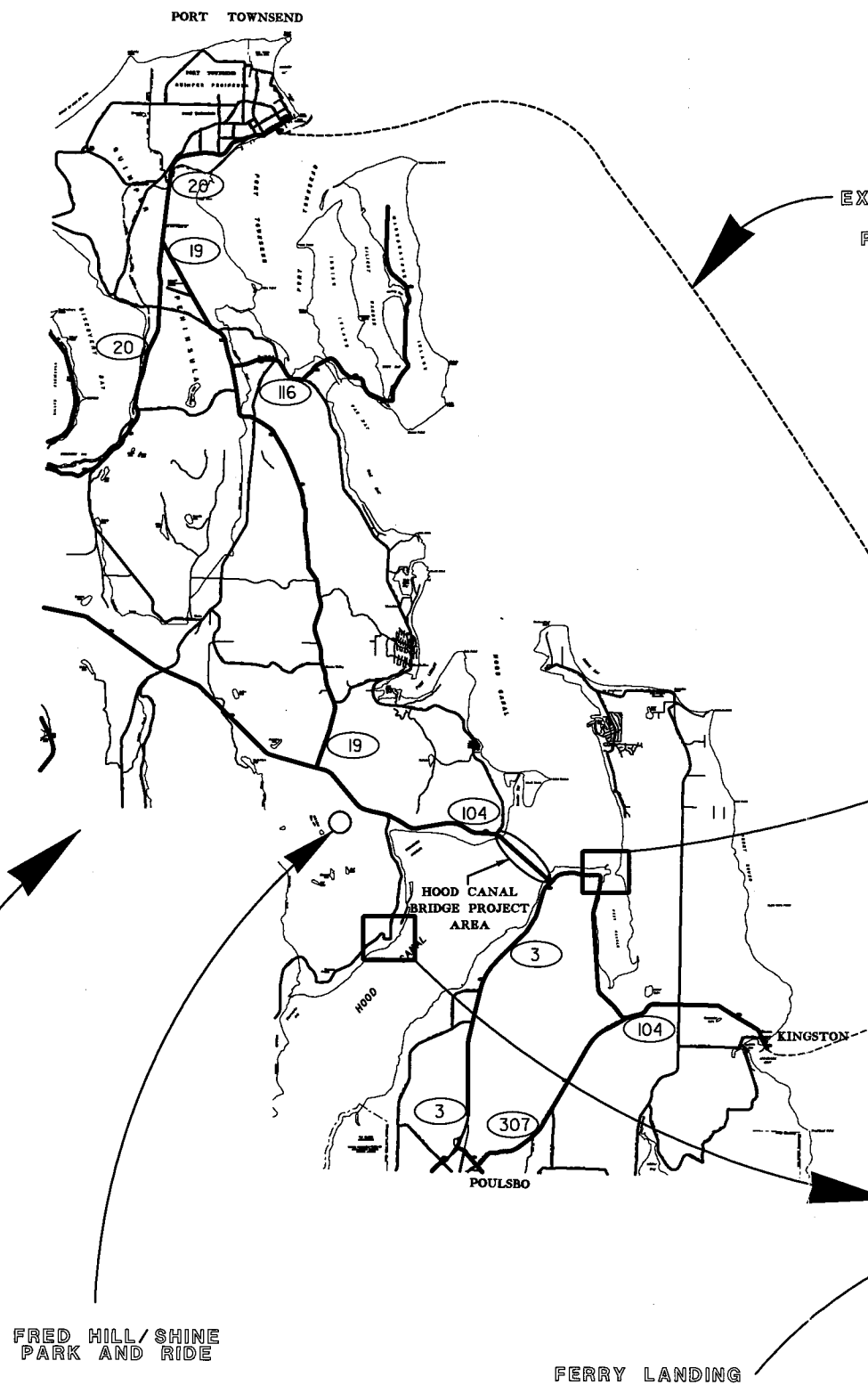
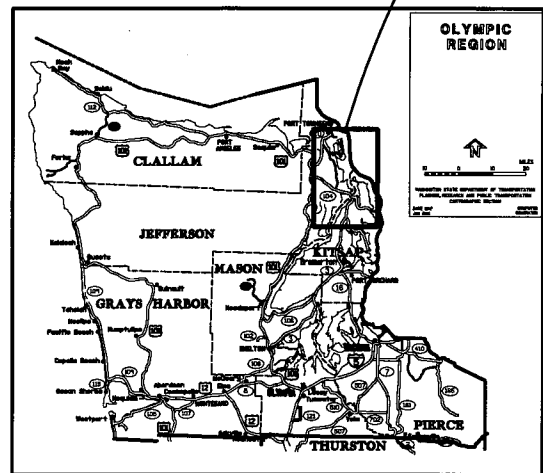
Prepared By:
WSDOT Olympic Region

May 2002



Legend

- State Road
- County Road
- (307) State Route Number



Pit Equipment

ACCESS ROAD TO SR 104

PASSENGER PICK-UP/DROP-OFF

TRANSIT BOARDING AREA

1130 TOTAL PARKING SPACES

Pit Equipment

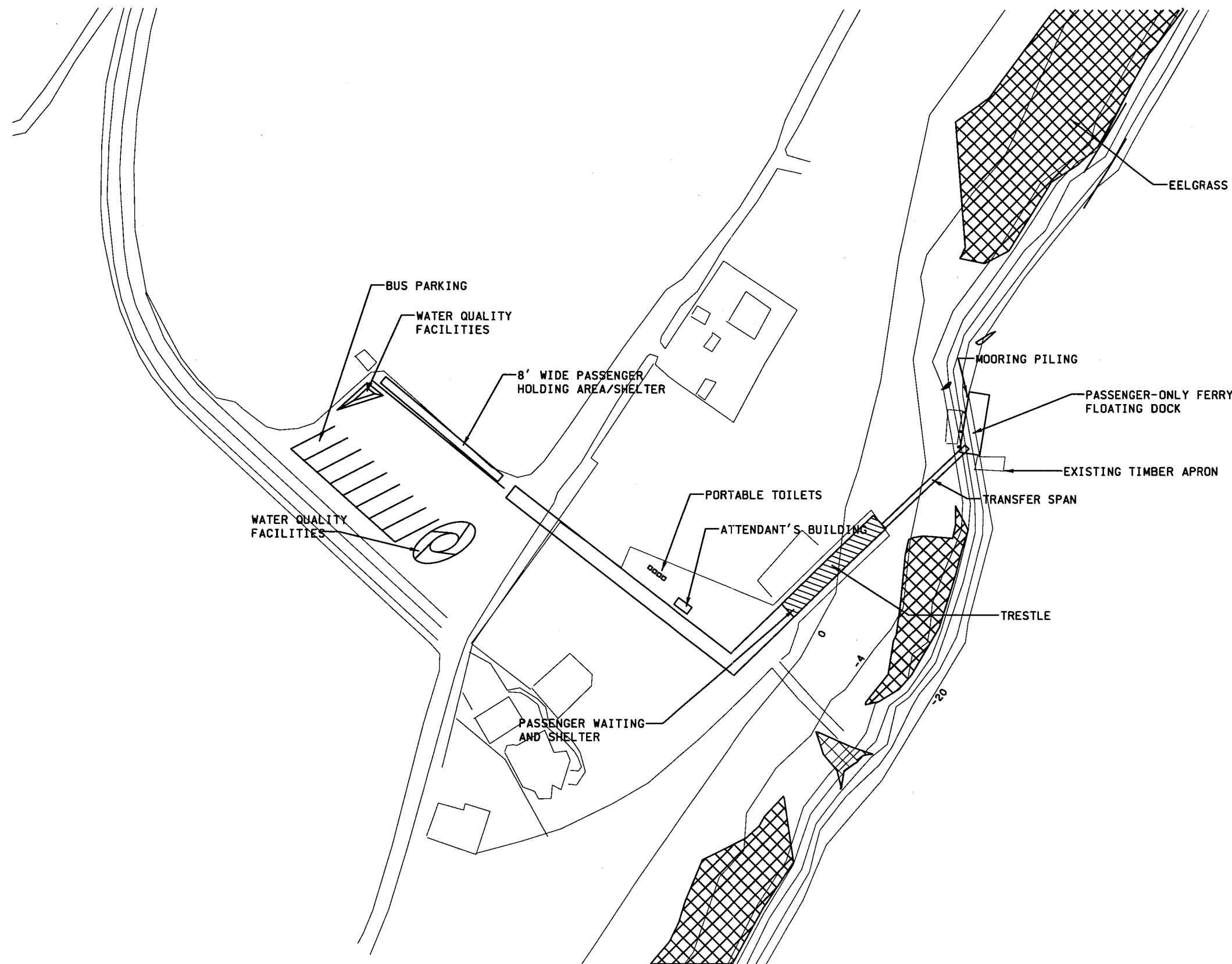
DISABLED PARKING

Existing Detention Pond

PASSENGER SHELTER

Pit Equipment

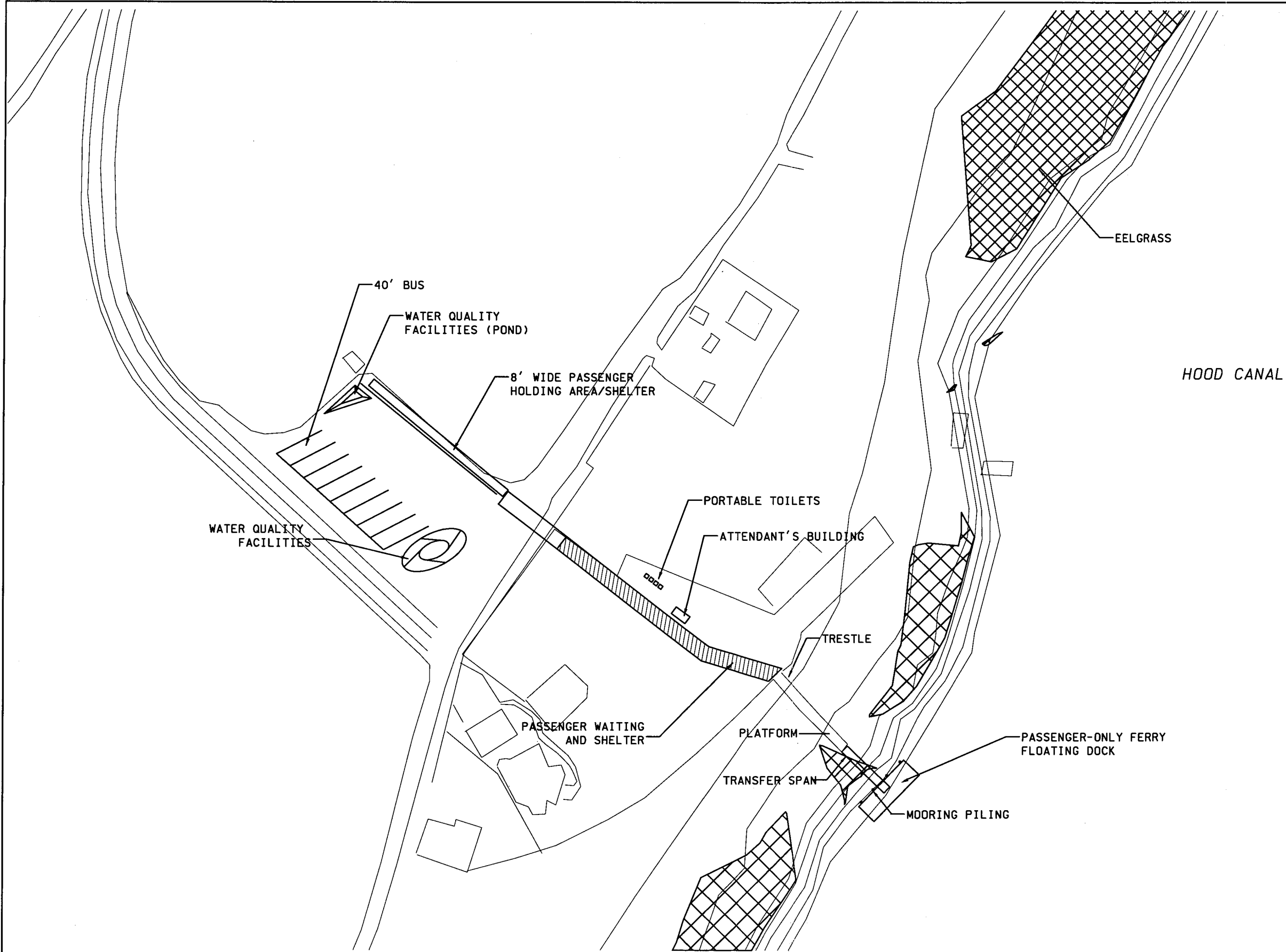
Pit Equipment






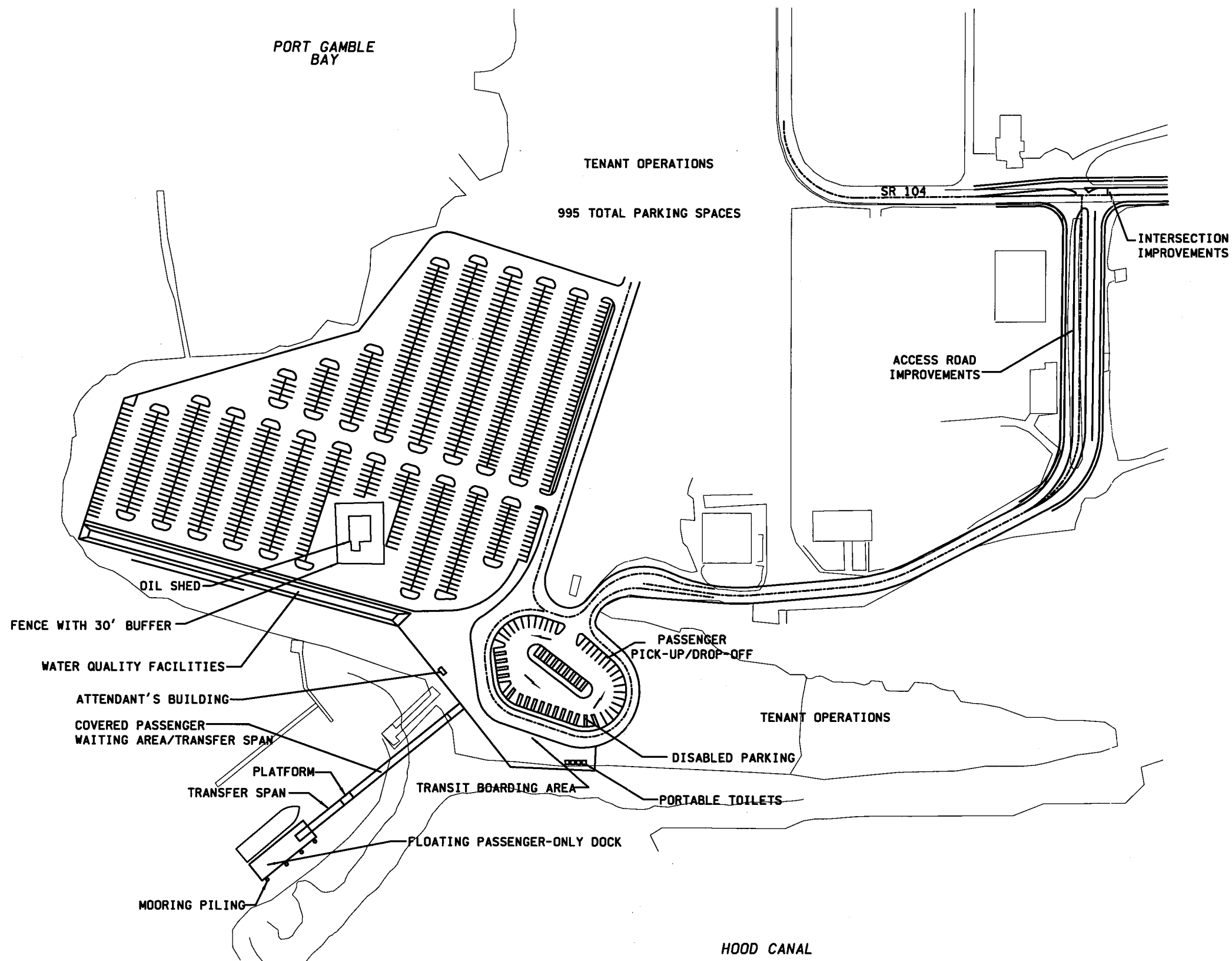
HOOD CANAL

LEGEND

- PORTABLE TOILET
- ▬ WATER QUALITY FACILITIES
- ⊞ EEL GRASS




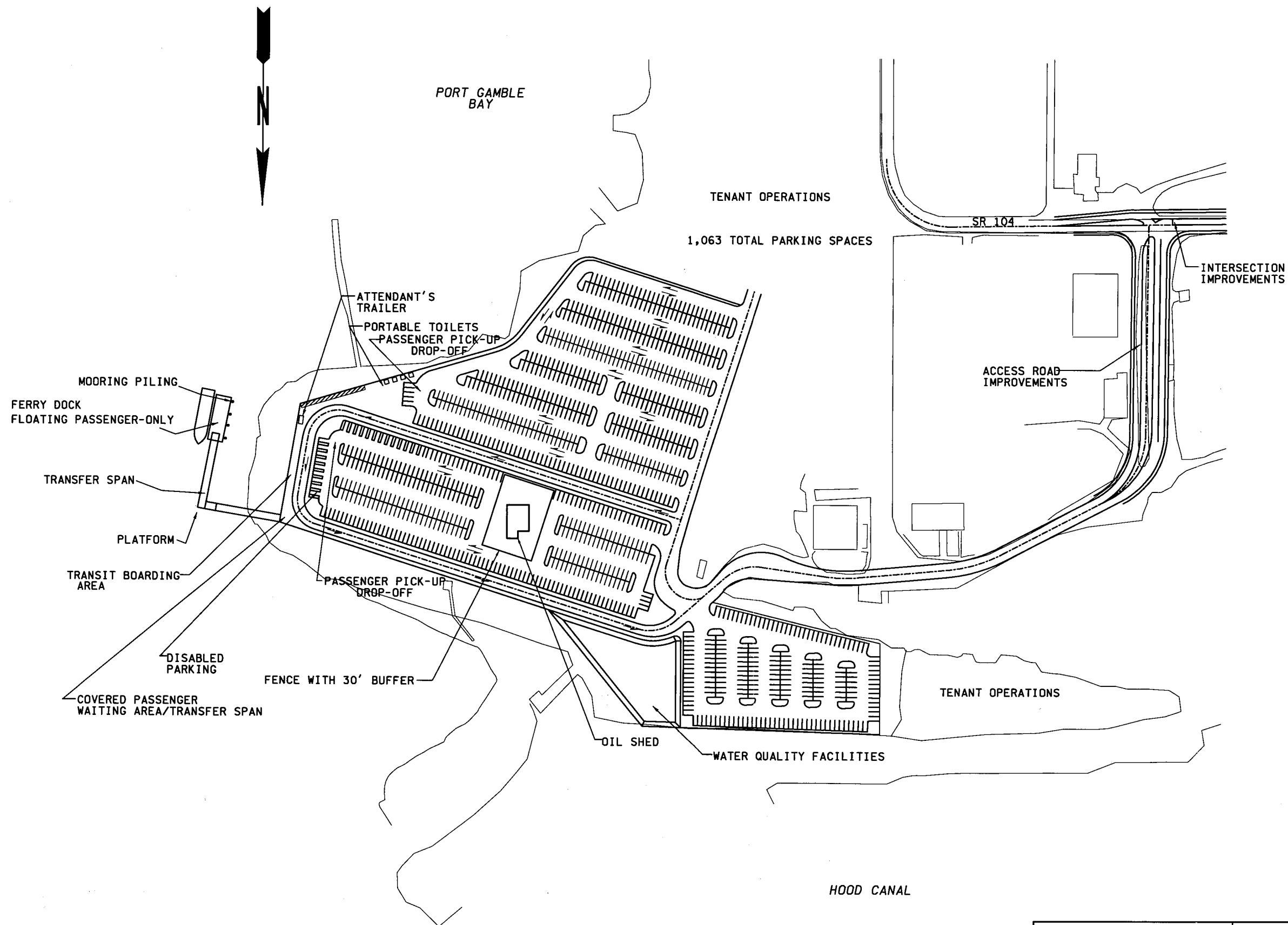
- LEGEND**
-  PORTABLE TOILET
 -  WATER QUALITY FACILITIES
 -  EEL GRASS



LEGEND


-  PORTABLE TOILET
-  WATER QUALITY FACILITIES

 Washington State Department of Transportation	SR 104 HOOD CANAL BRIDGE RETROFIT AND EAST HALF REPLACEMENT	PLOT5
	PORT GAMBLE PASSENGER-ONLY FERRY DOCK & PARK AND RIDE NORTH ALTERNATIVE	E-5
		SHEET 5 OF 6 SHEETS



LEGEND

- PORTABLE TOILET
- ▬ WATER QUALITY FACILITIES

 Washington State Department of Transportation	SR 104 HOOD CANAL BRIDGE RETROFIT AND EAST HALF REPLACEMENT		PLOT5
	PORT GAMBLE PASSENGER-ONLY FERRY DOCK & PARK AND RIDE SOUTH ALTERNATIVE		E-6
			SHEET 6 OF 6 SHEETS

Appendix F

SECTION 106 AND TRIBAL CONSULTATION

State Route 104

Hood Canal Bridge 104/005.1 (West Half)
104/005.2 (East Half)

Prepared By:
WSDOT Olympic Region

May 2002



U.S. Department
of Transportation

**Federal Highway
Administration**

Washington Division

Suite 501 Evergreen Plaza
711 South Capitol Way
Olympia, Washington 98501-1284
(360) 753-9480
(360) 753-9889 (FAX)
<http://www.fhwa.dot.gov/wadiv>

July 26, 2000

HFO-WA.1/597.1

The Honorable Denny Hurtado, Chairperson
Skokomish Tribe
N. 80 Tribal Center Road
Shelton, Washington 98584

Attention: Genny Rodgers, Cultural Coordinator

**Initiation of the Section 106 Process,
Hood Canal Bridge Retrofit and East
Half Replacement**

Dear Chairperson Hurtado:

The Federal Highway Administration and the Washington State Department of Transportation are proposing to develop an undertaking to address an identified transportation need in Jefferson and Kitsap Counties. This project proposes to replace the pontoons and superstructure of the east half of the Hood Canal Bridge, replace approach spans on both ends, replace the transition span on the east half, and bridge related work on SR104.

In order to ensure that we take into account the effects of this undertaking on properties listed in or eligible for listing in the National Register of Historic Places, the FHWA is initiating formal Section 106 consultation pursuant to 36 CFR 800.2(a)(4). Recognizing the government-to-government relationship which we have with the tribe, the Federal Highway Administration will continue to play a key role in this undertaking as the responsible Federal agency. You may contact us at anytime for assistance with the process and/or the undertaking. Also, since the Washington State Department of Transportation will be directly managing the cultural resources studies and will be carrying out this undertaking, we encourage you to participate in direct consultation with the WSDOT and their consultants.

Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party and identifying key tribal contacts, is greatly appreciated. Please provide a response by **August 29, 2000** so that we may set up a meeting to discuss this undertaking and the area of potential effects. Should you have any questions about this matter, you may contact our

Section 106 Consultation

Section 106 specialist, Dave Leighow, by phone at (360) 753-9486 or by e-mail at dave.leighow@fhwa.dot.gov. You may also contact Sandie Turner, WSDOT Cultural Resources Manager, by phone at (360) 705-7493 or by e-mail at turners@wsdot.wa.gov.

Sincerely,

/s/ Gene K. Fong

GENE K. FONG
Division Administrator

Enclosures

cc: Dr. Allyson Brooks, SHPO
Sandie Turner, OSC
Ken Stone, OR *TS*
Dave Leighow



U.S. Department
of Transportation

**Federal Highway
Administration**

Washington Division

Suite 501 Evergreen Plaza
711 South Capitol Way
Olympia, Washington 98501-1284
(360) 753-9480
(360) 753-9889 (FAX)
<http://www.fhwa.dot.gov/wadiv>

July 26, 2000

HFO-WA.1/597.1

The Honorable Bennie J. Armstrong, Chairperson
Suquamish Tribe
PO Box 498
Suquamish, Washington 98392

Attention: Charlie Sigo, Cultural Resources

**Initiation of the Section 106 Process,
Hood Canal Bridge Retrofit and East
Half Replacement**

Dear Chairperson Armstrong:

The Federal Highway Administration and the Washington State Department of Transportation are proposing to develop an undertaking to address an identified transportation need in Jefferson and Kitsap Counties. This project proposes to replace the pontoons and superstructure of the east half of the Hood Canal Bridge, replace approach spans on both ends, replace the transition span on the east half, and bridge related work on SR104.

In order to ensure that we take into account the effects of this undertaking on properties listed in or eligible for listing in the National Register of Historic Places, the FHWA is initiating formal Section 106 consultation pursuant to 36 CFR 800.2(a)(4). Recognizing the government-to-government relationship which we have with the tribe, the Federal Highway Administration will continue to play a key role in this undertaking as the responsible Federal agency. You may contact us at anytime for assistance with the process and/or the undertaking. Also, since the Washington State Department of Transportation will be directly managing the cultural resources studies and will be carrying out this undertaking, we encourage you to participate in direct consultation with the WSDOT and their consultants.

Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party and identifying key tribal contacts, is greatly appreciated. Please provide a response by **August 29, 2000** so that we may set up a meeting to discuss this undertaking and the area of potential effects. Should you have any questions about this matter, you may contact our


Section 106 Consultation

Section 106 specialist, Dave Leighow, by phone at (360) 753-9486 or by e-mail at dave.leighow@fhwa.dot.gov. You may also contact Sandie Turner, WSDOT Cultural Resources Manager, by phone at (360) 705-7493 or by e-mail at turners@wsdot.wa.gov.

Sincerely,

GENE K. FONG
Division Administrator

Enclosures

cc: Dr. Allyson Brooks, SHPO
Sandie Turner, OSC
Ken Stone, OR 
Dave Leighow



U.S. Department
of Transportation

**Federal Highway
Administration**

Washington Division

Suite 501 Evergreen Plaza
711 South Capitol Way
Olympia, Washington 98501-1284
(360) 753-9480
(360) 753-9889 (FAX)
<http://www.fhwa.dot.gov/wadiv>

July 26, 2000

HFO-WA.1/597.1

The Honorable Ronald Charles, Chairperson
Port Gamble S'Klallam Tribe
31912 Little Boston Road NE
Kingston, Washington 98346

Attention: Marie Hebert, Director, Cultural Resources

**Initiation of the Section 106 Process,
Hood Canal Bridge Retrofit and East
Half Replacement**

Dear Chairperson Charles:

The Federal Highway Administration and the Washington State Department of Transportation are proposing to develop an undertaking to address an identified transportation need in Jefferson and Kitsap Counties. This project proposes to replace the pontoons and superstructure of the east half of the Hood Canal Bridge, replace approach spans on both ends, replace the transition span on the east half, and bridge related work on SR104.

In order to ensure that we take into account the effects of this undertaking on properties listed in or eligible for listing in the National Register of Historic Places, the FHWA is initiating formal Section 106 consultation pursuant to 36 CFR 800.2(a)(4). Recognizing the government-to-government relationship which we have with the tribe, the Federal Highway Administration will continue to play a key role in this undertaking as the responsible Federal agency. You may contact us at anytime for assistance with the process and/or the undertaking. Also, since the Washington State Department of Transportation will be directly managing the cultural resources studies and will be carrying out this undertaking, we encourage you to participate in direct consultation with the WSDOT and their consultants.

Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party and identifying key tribal contacts, is greatly appreciated. Please provide a response by **August 29, 2000** so that we may set up a meeting to discuss this undertaking and the area of potential effects. Should you have any questions about this matter, you may contact our

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JUL 31 2000

OLYMPIC REGION

Section 106 Consultation

Section 106 specialist, Dave Leighow, by phone at (360) 753-9486 or by e-mail at dave.leighow@fhwa.dot.gov. You may also contact Sandie Turner, WSDOT Cultural Resources Manager, by phone at (360) 705-7493 or by e-mail at turners@wsdot.wa.gov.

Sincerely,

/s/ Gene K. Fong

GENE K. FONG
Division Administrator

Enclosures

cc: Dr. Allyson Brooks, SHPO
Sandie Turner, OSC
Ken Stone, OR *Tom*
Dave Leighow



STATE OF WASHINGTON
OFFICE OF COMMUNITY DEVELOPMENT
OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION

420 Golf Club Road SE, Suite 201, Lacey • PO Box 48343 • Olympia, Washington 98504-8343 • (360) 407-0752
Fax Number (360) 407-6217

May 30, 2001

Mr. Craig Holstine
Washington State Department of Transportation
P.O. Box 47332
Olympia, Washington 98504-7332

In future correspondence please refer to:
Log: 053001-21-FHWA
Re: Determination of Eligibility, Hood Canal
Bridge, S.R. 104


Dear Mr. Holstine:

Thank you for contacting the Washington State Office of Archaeology and Historic Preservation (OAHP) regarding the above referenced action. From your correspondence, I understand that the Department of Transportation (WSDOT) proposes to replace and widen the existing Hood Canal Bridge on S.R. 104.

In response, I have reviewed your description and statement of significance regarding the bridge. As a result of this review and on behalf of the State Historic Preservation Officer (SHPO) I concur with your determination that the floating portions of the bridge (both the east and west halves) are eligible for listing in the National Register of Historic Places. This opinion is based upon the bridge representing innovative and nationally significant floating bridge design and technology. I agree that the bridge meets the threshold of exceptional significance established by Criteria Consideration G for properties not yet 50 years of age recognizing that the older eastern half of the bridge is 40 years of age. Finally, I concur that the sunken western half of the 1961 floating bridge is not National Register eligible. Although there are parallels to the National Register listed sunken ruins of the Tacoma Narrows Bridge, the design and technological innovations represented at the Hood Canal floating bridge are more adequately conveyed in the intact eastern half of the bridge. In view of apparent eligibility, proposed replacement of the eastern half and widening of the entire span appears to have an adverse effect upon the character defining features that qualify the bridge for National Register listing. Therefore, I recommend that a memorandum of agreement (MOA) be developed and implemented between the SHPO and the Federal Highway Administration (FHWA). The MOA should identify specific measures to mitigate the adverse effects of the action on the historic bridge.

Again, thank you for the opportunity to review and comment. Should you have any questions, please feel free to contact me at 360-407-0766 or gregg@cted.wa.gov.

Sincerely,



Gregory Griffith
Deputy State Historic Preservation Officer

GAG

10ms

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JUN 01 2001
OLYMPIC REGION





**Washington State
Department of Transportation**
Douglas B. MacDonald
Secretary of Transportation

Olympic Region Headquarters
5720 Capitol Boulevard, Tumwater
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October 19, 2001

The Honorable Denny Hurtado
Chair, Skokomish Tribe
N. 80 Tribal Center Road
Shelton, WA 98584

RE: SR 104, Hood Canal Bridge Retrofit and East Half Replacement OL 3305
And SR 101, Mt. Walker Vicinity Passing Lanes

Dear Chairperson Hurtado:

The Federal Highway Administration (FHWA) contacted you regarding initiation of the Section 106 process for the Hood Canal Bridge retrofit and east half replacement on July 26, 2000, letter attached. As you know, Washington State Department of Transportation (WSDOT), will start work on the bridge in 2003, with a completion year of 2007. The complete closure of the bridge is planned for 6 – 8 weeks during the summer of 2006. As part of this process to reroute people around the peninsula, we are working on traffic mitigations for this closure. The possible mitigation measures that we have developed are as follows:

- **Hood Canal Passenger-Only Ferry (POF)** – WSDOT plans to operate POFs crossing Hood Canal between South Point and Port Gamble. Two POFs, with a capacity for 350 passengers are envisioned for this route. Departures would be approximately every 40 to 45 minutes. One vessel would operate 24 hours per day, and the second vessel would operate 16 hours per day. Shuttle busses will be provided at South Point to take passengers to and from the Park & Ride, which is planned at Fred Hill Materials (Shine Gravel Pit). The Port Gamble site will have a temporary passenger only ferry (POF) facility and the supporting park and ride lot both co-located on-site. A transit facility, that will serve up to four standard buses, parking for vanpools and carpools, will be developed within the Port Gamble site. Other facilities to be developed are ADA parking, sheltered waiting areas, and toilet facilities. Port Gamble site is a historical district and WSDOT will work with the State Historical Preservation Officer (SHPO) to determine any adverse impacts due to the proposed activities.
- **Port Townsend/Edmonds/Kingston Auto Ferry** – WSDOT proposes to supplement existing auto ferry service with two Jumbo Class ferries carrying either 206 vehicles for a Jumbo Mark I or 218 vehicles for a Jumbo Mark II vessel, with each vessel scheduled for a 20-hour operating day. Both of these ferries would depart the Port Townsend ferry dock approximately every four hours, one headed for Edmonds and the other to Kingston. These sailings would be in addition to the existing service from Port Townsend to Keystone.

The Honorable Denny Hurtado
October 19, 2001
Page 2

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- **Mt. Walker Passing Lanes** – WSDOT proposes to construct permanent climbing lanes on SR 101 near Mount Walker vicinity. The south bound passing lane is being considered in the vicinity of MP 297.62 to MP 298.24, Highway 101, Section 27 and 34, Township 27 N., Range 2 W. W.M and the proposed north bound lane is located in the area of MP 301.23 to MP 301.70, Section 11, Township 26 N., Range 2 W. W.M. WSDOT will be working within the existing right-of-way, but we may need to acquire additional right-of-way from the National Forest Service. It is within this portion of the project, that we will be conducting a cultural survey in the undisturbed soil within the area of potential effects.

We would like to have your assistance in ascertaining any information about traditional cultural areas that may be affected by the proposed undertaking. Your input will be a valuable contribution to the cultural resources survey effort.

We are enclosing a map and a schedule for these activities. We are looking forward to hearing from you.

Should you have any questions relative to this matter, please don't hesitate to call me at 360-357-2660 or Randy Neff at 360-357-2715.

Sincerely,

/s/ Ken Stone mailed 10/22/01

Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:ren:tl

Enclosure Copy of letter dated July 26, 2000
 Vicinity Map
 Schedule

cc: FHWA – Steve Saxton – w/enclosures to everyone
 Sandie Turner, WSDOT
 Project Engineers Office, Amity Trowbridge
 Genny Rogers, Cultural Technician, Skokomish Tribe
 File
 SF1019001(1140)



**Washington State
Department of Transportation**
Douglas B. MacDonald
Secretary of Transportation

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October 22, 2001

Honorable Bennie J. Armstrong
Chair, Suquamish Tribe
P.O. Box 498
Suquamish, WA 98392

RE: SR 104, Hood Canal Bridge Retrofit and East Half Replacement 0L 3305
And Mt. Walker Vicinity Passing Lanes

Dear Chairperson Armstrong:

The Federal Highway Administration (FHWA) contacted you regarding initiation of the Section 106 process for the Hood Canal Bridge retrofit and east half replacement on July 26, 2000, letter attached. As you know, Washington State Department of Transportation (WSDOT), will start work on the bridge in 2003, with a completion year of 2007. The complete closure of the bridge is planned for 6 – 8 weeks during the summer of 2006. As part of this process to reroute people around the peninsula, we are working on traffic mitigations for this closure. The possible mitigation measures that we have developed are as follows:

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Honorable Bennie J. Armstrong
October 22, 2001
Page 2

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We would like to have your assistance in ascertaining any information about traditional cultural areas that may be affected by the proposed undertaking. Your input will be a valuable contribution to the cultural resources survey effort.

We are enclosing a map and a schedule for these activities. We are looking forward to hearing from you.

Should you have any questions relative to this matter, please don't hesitate to call me at 360-357-2660 or Randy Neff at 360-357-2715.

Sincerely,

/s/ Ken Stone mailed 10/22/01

Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:ren:tl
Enclosure Copy of letter dated July 26, 2000
 Vicinity Map
 Schedule

cc: FHWA – Steve Saxton
 Sandie Turner, WSDOT
 Project Engineers Office, Amity Trowbridge
 Charlie Sigo, Cultural Resources, Suquamish Tribe w/ attach
 File
 SF10190001(1141)



**Washington State
Department of Transportation**
Douglas B. MacDonald
Secretary of Transportation

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October 22, 2001

The Honorable Ronald Charles
Chair, Port Gamble S'Klallam Tribe
31912 Little Boston Rd. NE
Kingston, WA 98346

RE: SR 104, Hood Canal Bridge Retrofit and East Half Replacement OL 3305
And Mt. Walker Vicinity Passing Lanes

Dear Chairperson Charles:

The Federal Highway Administration (FHWA) contacted you regarding initiation of the Section 106 process for the Hood Canal Bridge retrofit and east half replacement on July 26, 2000, letter attached. As you know, Washington State Department of Transportation (WSDOT), will start work on the bridge in 2003, with a completion year of 2007. The complete closure of the bridge is planned for 6 – 8 weeks during the summer of 2006. As part of this process to reroute people around the peninsula, we are working on traffic mitigations for this closure. The possible mitigation measures that we have developed are as follows:

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Honorable Ronald Charles
October 22, 2001
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We would like to have your assistance in ascertaining any information about traditional cultural areas that may be affected by the proposed undertaking. Your input will be a valuable contribution to the cultural resources survey effort.

We are enclosing a map and a schedule for these activities. We are looking forward to hearing from you.

Should you have any questions relative to this matter, please don't hesitate to call me at 360-357-2660 or Randy Neff at 360-357-2715.

Sincerely,

/s/ Ken Stone mailed 10/22/01

Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:ren:tl
Enclosure Copy of letter dated July 26, 2000
 Vicinity Map
 Schedule

cc: FHWA – Steve Saxton
 Sandie Turner, WSDOT
 Project Engineers Office, Amity Trowbridge
 Marie Hebert, Cultural Resources Director, Port Gamble S'Kallum Tribe
 File
 SF10220001(1142)



Washington State
Department of Transportation
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December 31, 2001

The Honorable W. Ron Allen
Chair, Jamestown S'Kallum Tribe
1033 Old Blyn Highway
Sequim, WA 98382

RE: SR 104, Hood Canal Bridge Retrofit and East Half Replacement (OL3305), Mt. Walker Vicinity Passing Lanes and the National Historic Preservation Act, Section 106 Consultation

Dear Chairperson Allen:

The Washington State Department of Transportation (WSDOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to develop an undertaking to address an identified transportation need in Kitsap and Jefferson Counties. During the consultation process your tribe was identified as a participating member of the Point No Point Treaty Area Tribes. We have been in communication with Ms. Kathy Duncan, your Cultural Resources Specialist, whom has requested information pertaining to our proposed project.

The project that was initially identified in our letter dated October 22, 2001 to the other tribes, is the retrofit of the west half of the Hood Canal Bridge and replacement of the east half. This project is located on SR 104, between MP 13.75 to MP 15.50. The project proposes to replace the east half floating portion of the Hood Canal Bridge, the east and west approach span and trusses, widen the west half of the structure to accommodate 8 foot shoulders across the bridge, and pave the areas adjacent to the bridge. At the approaches, there will be excavation around the bridge abutments of about 10 feet beyond the edge of the paved roadway. The length of excavation will be about 30 feet along the slope. This area was filled at the time of original construction of the bridge. As part of the construction process the Hood Canal Bridge will be closed for approximately 6 to 8 weeks during the summer of 2006.

As part of this process to reroute people across the canal or around the peninsula, we are working on traffic mitigation measures for this closure. The possible mitigation measures that we have developed are as follows:

- **Hood Canal Passenger-Only Ferry (POF)** – WSDOT plans to operate POFs crossing Hood Canal between South Point and Port Gamble. Two POFs, with a capacity for 350 passengers are envisioned for this route. Departures would be approximately every 40 to 45 minutes. One vessel would operate 24 hours per day, and the second vessel would operate 16 hours per day. Shuttle busses will be

The Honorable W. Ron Allen
December 31, 2001
Page 2

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- **Port Townsend/Edmonds/Kingston Auto Ferry** – WSDOT proposes to supplement existing auto ferry service with two Jumbo Class ferries carrying either 206 vehicles for a Jumbo Mark I or 218 vehicles for a Jumbo Mark II vessel, with each vessel scheduled for a 20-hour operating day. Both of these ferries would depart the Port Townsend ferry dock approximately every four hours, one headed for Edmonds and the other to Kingston. These sailings would be in addition to the existing service from Port Townsend to Keystone.
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- **Mt. Walker Passing Lanes** – WSDOT proposes to construct permanent climbing lanes on SR 101 in the Mount Walker vicinity. The south bound passing lane is being considered in the vicinity of MP 297.62 to MP 298.24, Highway 101, Section 27 and 34, Township 27 N., Range 2 W. W.M and the proposed north bound lane is located in the area of MP 301.23 to MP 301.70, Section 11, Township 26 N., Range 2 W. W.M. WSDOT will be working primarily within the existing right-of-way, but we may need to acquire additional right-of-way from the National Forest Service. It is within this portion of the project that we will be conducting a cultural resources survey in the undisturbed soil within the area of potential effect. I should note that this was a prior programmed project with independent utility, and as such we may pursue environmental review and documentation separately from the Hood Canal bridge project.

We have attached for your convenience maps showing these the areas of construction and mitigation.

In order to ensure that we take into account the effects of this undertaking on properties listed in or eligible for listing in the National Register of Historic Places, the WSDOT is initiating formal Section 106 consultation pursuant to 36 CFR 800.2(c)(4). Recognizing the government-to-government relationship that the Federal Highway Administration has with the tribe, they will continue to play a key role in this undertaking as the responsible Federal agency. However, since the WSDOT has been delegated the authority from FHWA to initiate consultation and we will be directly managing the cultural resources studies and carrying out this undertaking, you may contact us at anytime for assistance with the process and/or the undertaking.

Section 106 Consultation

The Honorable W. Ron Allen
December 31, 2001
Page 3

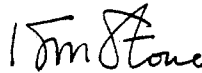
We have had a cultural resources survey conducted by Archaeological and Historical Services of Eastern Washington University. This survey is enclosed along with the initial information that was sent out to the other participating tribes possibly affected by this project.

Your response to this letter, acknowledging your interest in participating in this undertaking as a consulting party and identifying key tribal contacts, is greatly appreciated. Please provide a response by January 28, 2002, so that we may discuss this undertaking and the area of potential effects. Should you have any questions about this project, you may contact Randy Neff at (360) 357-2715, WSDOT, Olympic Region, P.O. Box 47440, Olympia, WA 987504-7440 or me at 360-357-2660 or by e-mail at stonek@wsdot.wa.gov.

You should also be aware that the Transportation Permit Efficiency and Accountability Committee has selected this project as a pilot project, pursuant to ESB 6188, the Permit Streamlining Act.

If you have any general questions about the Section 106 process at WSDOT, you may contact our Section 106 specialist, Sandie Turner, WSDOT Cultural Resources Manager, by phone at (360) 570-6637 or by e-mail at turners@wsdot.wa.gov.

Sincerely,



Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:tl
Enclosures: Maps & Cultural Resources

cc: SHPO
FHWA
Kathy Duncan, Cultural Resources Specialist, Jamestown S'Klallam Tribe
Amity Trowbridge, PE
File
SF12270001(1215)

PURPOSE AND SCOPE OF CONSULTATION

Through consultation, we want to ensure that the tribe is afforded the opportunity to identify any concerns you may have regarding the effects of the proposed undertaking on historic properties; that you have a reasonable opportunity to advise the Federal Highway Administration and the Washington State Department of Transportation on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; that you have the opportunity to express your views on the undertaking's effects on such properties; and, that the tribe is a participant in the resolution of any adverse effects which the undertaking might have on such properties.

The first step in the Section 106 process, prior to the identification and evaluation of historic properties, is to identify the area of potential effects. *Area of potential effects* means the geographic area or areas within which the proposed undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. Your participation as a consulting party in determining the area of potential effects is invited. Once this area has been defined, a cultural resources survey will be initiated. If the tribe has information about traditional cultural areas that might be affected by the proposed undertaking, your input will be a valuable contribution to the cultural resources survey effort.

Once historic properties have been identified and evaluated for their historical significance in accordance with the criteria of the Keeper of the National Register of Historic Places, the affects of the proposed undertaking on any properties determined to be listed in or eligible for listing in the National Register will be assessed. The tribe's participation in this effort is invited.

As defined by the Advisory Council on Historic Preservation, *consultation* means "...the process of seeking, discussing, and considering the views of other participants and, where feasible, seeking agreement with them regarding matters arising in the section 106 process." As such, consultation is fundamental to the process of seeking ways to avoid, minimize or mitigate the affects of the undertaking on historic properties. Consequently, your active participation as a consulting party in the proposed undertaking is encouraged.



**Washington State
Department of Transportation**
Douglas B. MacDonald
Secretary of Transportation

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January 3, 2002

The Honorable Denny Hurtado
Chair, Skokomish Tribe
80 N. Tribal Center Road
Shelton, WA 98392

RE: SR 104, East Half Replacement and Retro-fit of Hood Canal Bridge
Cultural Resources Survey

Dear Chairperson Hurtado:

The Washington State Department of Transportation (WSDOT) requested a Cultural Resources Survey be conducted for the retrofit of the west half and replacement of the east half of the Hood Canal Bridge. As you know, WSDOT will start work on the bridge in 2003, with a completion year of 2007. The complete closure of the bridge is planned for 6 – 8 weeks during the summer of 2006. As part of this process to reroute people across the canal or around the peninsula, we are working on traffic mitigations for this closure. The possible mitigation measures that we have developed were identified in our previous letter.

The survey was conducted at South Point and Port Gamble. We would respectfully request your review of the survey that was conducted by Archaeological and Historical Services at Eastern Washington University and forward your comment. We would like to have your assistance in ascertaining any information about traditional cultural areas that may be affected by the proposed undertaking. Your input will be a valuable contribution to the cultural resources survey.

If you have any questions pertaining to the survey or would like more information regarding project, please don't hesitate to call me at 360-357-2660 or Randy Neff at (360) 357-2715.

Sincerely,

A handwritten signature in black ink, appearing to read 'K Stone'.

Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:REN:tl
Enclosure

cc: Sandie Turner, WSDOT w/o Enclosure
Project Engineers Office, Amity Trowbridge w/enclosure
Genny Rogers, Cultural Resources, Skokomish Tribe w/enclosure
File
SF01030002(1222)



**Washington State
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January 3, 2002

The Honorable Bennie J. Armstong
Chair, Suquamish Tribe
PO Box 498
Suquamish, WA 98392

RE: SR 104, East Half Replacement and Retro-fit of Hood Canal Bridge
Cultural Resources Survey

Dear Chairperson Armstong:

The Washington State Department of Transportation (WSDOT) requested a Cultural Resources Survey be conducted for the retrofit of the west half and replacement of the east Half of the Hood Canal Bridge. As you know, WSDOT will start work on the bridge in 2003, with a completion year of 2007. The complete closure of the bridge is planned for 6 – 8 weeks during the summer of 2006. As part of this process to reroute people across the canal or around the peninsula, we are working on traffic mitigations for this closure. The possible mitigation measures that we have developed were identified in our previous letter.

The survey was conducted at South Point and Port Gamble. We would respectfully request your review of the survey that was conducted by Archaeological and Historical Services at Eastern Washington University and forward your comment. We would like to have your assistance in ascertaining any information about traditional cultural areas that may be affected by the proposed undertaking. Your input will be a valuable contribution to the cultural resources survey.

If you have any questions pertaining to the survey or would like more information regarding project, please don't hesitate to call me at 360-357-2660 or Randy Neff at (360) 357-2715.

Sincerely,

Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:REN:tl
Enclosure

cc: Sandie Turner, WSDOT w/o Enclosure
Project Engineers Office, Amity Trowbridge w/enclosure
Charlie Sigo, Cultural Resources, *Suquamish* Tribe w/enclosure
File
SF01030002(1225)



**Washington State
Department of Transportation**
Douglas B. MacDonald
Secretary of Transportation

Olympic Region Headquarters
5720 Capitol Boulevard, Tumwater
P.O. Box 47440
Olympia, WA 98504-7440
360-357-2600
Fax 360-357-2601
TTY: 1-800-833-6388
www.wsdot.wa.gov

January 3, 2002

The Honorable W. Ron Allen
Chair, Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, WA 98382

RE: SR 104, East Half Replacement and Retro-fit of Hood Canal Bridge
Cultural Resources Survey

Dear Chairperson Allen:

The Washington State Department of Transportation (WSDOT) requested a Cultural Resources Survey be conducted for the retrofit of the west half and replacement of the east half of the Hood Canal Bridge. As you know, WSDOT will start work on the bridge in 2003, with a completion year of 2007. The complete closure of the bridge is planned for 6 – 8 weeks during the summer of 2006. As part of this process to reroute people across the canal or around the peninsula, we are working on traffic mitigations for this closure. The possible mitigation measures that we have developed were identified in our previous letter.

The survey was conducted at South Point and Port Gamble. We respectfully request your review of the survey that was conducted by Archaeological and Historical Services at Eastern Washington University and forward your comment. We would like to have your assistance in ascertaining any information about traditional cultural areas that may be affected by the proposed undertaking. Your input will be a valuable contribution to the cultural resources survey.

If you have any questions pertaining to the survey or would like more information regarding project, please don't hesitate to call me at 360-357-2660 or Randy Neff at (360) 357-2715.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Stone'.

Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:REN:tl
Enclosure

cc: Sandie Turner, WSDOT w/o Enclosure
Project Engineers Office, Amity Trowbridge w/enclosure
Kathy Duncan, Cultural Resources Director, Jamestown S'Klallam Tribe w/enclosure
File
SF01030002(1223)



**Washington State
Department of Transportation**
Douglas B. MacDonald
Secretary of Transportation

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Olympia, WA 98504-7440

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Fax 360-357-2601
TTY: 1-800-833-6388
www.wsdot.wa.gov

January 3, 2002

The Honorable Ronald Charles
Chair, Port Gamble S'Klallam Tribe
31912 Little Boston Rd. NE
Kingston, WA 98346

RE: SR 104, East Half Replacement and Retro-fit of Hood Canal Bridge
Cultural Resources Survey

Dear Chairperson Charles:

The Washington State Department of Transportation (WSDOT) requested a Cultural Resources Survey be conducted for the retrofit of the west half and replacement of the east half of the Hood Canal Bridge. As you know, WSDOT will start work on the bridge in 2003, with a completion year of 2007. The complete closure of the bridge is planned for 6 – 8 weeks during the summer of 2006. As part of this process to reroute people across the canal or around the peninsula, we are working on traffic mitigations for this closure. The possible mitigation measures that we have developed were identified in our previous letter.

The survey was conducted at South Point and Port Gamble. We respectfully request your review of the survey that was conducted by Archaeological and Historical Services at Eastern Washington University and forward your comment. We would like to have your assistance in ascertaining any information about traditional cultural areas that may be affected by the proposed undertaking. Your input will be a valuable contribution to the cultural resources survey.

If you have any questions pertaining to the survey or would like more information regarding project, please don't hesitate to call me at 360-357-2660 or Randy Neff at (360) 357-2715.

Sincerely,

Kenneth M. Stone
Region Environmental Manager
Olympic Region

KMS:REN:tl
Enclosure

cc: Sandie Turner, WSDOT w/o Enclosure
Project Engineers Office, Amity Trowbridge w/enclosure
Marie Hebert, Cultural Resources Director, Port Gamble S'Klallam Tribe w/enclosure
File
SF01030002(1224)



STATE OF WASHINGTON

OFFICE OF COMMUNITY DEVELOPMENT
Office of Archaeology and Historic Preservation
1063 S. Capitol Way, Suite 106 - Olympia, Washington 98501
(Mailing Address) PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 Fax Number (360) 586-3067

February 15, 2002

Mr. Ken Stone, Olympic Region Environmental Manager
Washington State Department of Transportation
P.O. Box 47440
Olympia, Washington 98004-7440

15ms

In future correspondence, please refer to:

Log: 021502-22-FHWA

Re: S.R. 104, Hood Canal Bridge Retrofit and East Half
Replacement

Dear Mr. Stone:

Thank you for contacting the Washington State Office of Archaeology and Historic Preservation (OAHP) regarding the above referenced action. This consultation is in compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended), and its implementing regulations as found in 36 CFR 800.4. From your letter, I understand that the Washington State Department of Transportation (WSDOT) proposes to operate pedestrian only ferry (POF) service from Port Gamble to South Point for six to eight weeks during the summer of 2006. The POF service is necessitated by the proposed Hood Canal Bridge Retrofit and replacement of the east half of the Bridge that will result in closure of the crossing to vehicles. The Hood Canal Bridge has been determined eligible for listing in the National Register of Historic Places.

In response, I have reviewed the documentation submitted to OAHP regarding this proposal. As a result of this review and on behalf of the State Historic Preservation Officer (SHPO) I concur that there are no historic properties at the South Point POF site. It is also my opinion that use of the former Port Gamble mill site will have no adverse effect to the Port Gamble National Historic Landmark District. The "no adverse effect" opinion is based on the fact that the proposed parking area at the former mill site will not cause any further damage or alteration to remains of the mill than has already been suffered by its demolition and ongoing use as a log transfer site. It is my understanding that remaining structures and foundations from the mill operations will not be altered and the site will be returned to existing conditions once the temporary POF service is discontinued.

In addition to the "no adverse effect" opinion, I have additional comments and recommendations concerning project impacts to the Historic District. I concur with WSDOT directing POF vehicle traffic along Puget Way and Walker Street to the mill site flat parking area. However, I am concerned that many drivers will avoid the Puget Way/Walker Street route and drive directly from S.R. 104 through the residential area. As this street is a primary area for appreciating the character of the District, I am concerned that increased traffic flow to the ferry terminal with attendant increase in noise, vibration, and safety issues (albeit temporary) will tend to diminish enjoyment of the District for visitors and residents alike. Therefore, I recommend that measures be implemented to assure drivers use the Puget Way/Walker Street route rather than short cuts through town. I also recommend that any changes to the Puget Way/Walker Street corridor resulting from the POF service (i.e. signage, paving, etc.) be removed and the streets returned to existing conditions and appearance. Finally, I recommend that should questions or issues arise during the POF service and resulting impacts to historic and cultural resources at Port Gamble and/or South Point, please contact OAHP and interested tribal representatives. Also, please consider Jan Eakins, a local resident and cultural resource professional, as an on-site resource should consultation issues arise. Jan may be reached at 360-297-6786.

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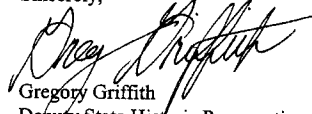
FEB 19 2002

OLYMPIC REGION

Mr. Ken Stone
February 15, 2002
Page Two

Again, thank you for the opportunity to review and comment on this action. Should you have any questions, please feel free to contact me at 360-586-3073 or gregg@cted.wa.gov.

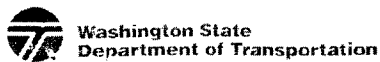
Sincerely,



Gregory Griffith
Deputy State Historic Preservation Officer

GAG
Enclosure ✓

Cc: Hank Florence



DETERMINATION OF ELIGIBILITY
FOR THE NATIONAL REGISTER OF HISTORIC PLACES
National Historic Preservation Act, 16 USC§ 470, as amended

PROPERTY NAME: **South Point**

COUNTY: Jefferson SR 104

COMMON NAME: South Point (Old Ferry Terminal)

PROJECT: Hood Canal Bridge Retrofit and East Half Replacement

SITE NUMBER:

LOCATION South Point is located in the NW 1/4 of Section 16, Township 27 N., Range 1E, W.M. a

CATEGORY OF PROPERTY

☐ Building(s) ☐ District ☐ Site ☐ Structure ☐ Object ☐ Traditional Cultural Place

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION DETERMINATION

☐ The historic property is **eligible** for inclusion in the National Register of Historic Places. (Explained on reverse.)

Applicable Criteria (36 CFR Part 60.4) ☐ A ☐ B ☐ C ☐ D ☒ Nationally ☐ Statewide ☐ Locally

Criteria considerations (exceptions) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G

☐ The historic property is **not eligible** for inclusion in the National Register of Historic Places.

☒ **No historic properties** were identified in the area of potential effect.

☐ **No opinion:** Eligibility determination is deferred to the State Historic Preservation Officer or the Keeper of the National Register of Historic Places.

COMMENTS

SIGNED: *Tom Stone*
Region Environmental Manager

DATE: 10 Jan 02

STATE HISTORIC PRESERVATION OFFICER OPINION

I understand that the Washington State Department of Transportation is requesting the concurrence of the State Historic Preservation Officer in its determination of the eligibility of SOUTH POINT (OLD FERRY TERMINAL) for inclusion in the National Register of Historic Places and that my opinion may be submitted to the Keeper of the National Register of Historic Places with a formal request for a determination of eligibility on this property. This statement confirms that I have been consulted as part of the Section 106 review process.

☐ The historic property is **eligible** for inclusion in the National Register of Historic Places.

☐ The historic property is **not eligible** for inclusion in the National Register of Historic Places.

☒ **No historic properties** were identified in the area of potential effect.

☐ **No opinion.** Eligibility determination is deferred to the Keeper of the National Register of Historic Places.

COMMENTS

SIGNED: *Oregon Griffith*
State Historic Preservation Officer

DATE: 2/15/02

OZ1502-22-FHWA

APPENDIX G

DISCIPLINE STUDIES LIST

State Route 104

**Hood Canal Bridge 104/005.1 (West Half)
 104/005.2 (East Half)**

**Prepared By:
WSDOT Olympic Region**

May 2002

Air Quality (Technical Memo)

Lawrence Spurgeon, WSDOT, 2001. *Hood Canal Bridge East Span Replacement Air Quality Impacts.*

Cultural Resources

Craig Holstine, WSDOT, 2001. Hood Canal Floating Bridge Retrofit and East Half Replacement Project: National Register of Historic Places Evaluation.

Stephen Emerson and Stan Gough, Archaeological and Historical Services, Eastern Washington University, *A Cultural Resources Survey of the Washington State Department of Transportation's Proposed Passenger Ferry Terminal Sites, South Point and Port Gamble, Jefferson and Kitsap Counties, Washington.*

Hazardous Materials

Michael Hutchinson, WSDOT, 2001, *Environmental Assessment Discipline Study, State Route 104, Hood Canal Bridge, Jefferson and Kitsap County, Washington. (Supplemented by December 20, 2001 Memorandum Regarding Port Gamble Temporary Passenger Only Ferry Facility).*

Noise (Technical Memo)

Lawrence Spurgeon, WSDOT, 2001. *Hood Canal Bridge East Span Replacement Noise Impacts.*

Socio-Economics and Transportation

Lawrence M. Jacobson and Don McCulloch, WSDOT, 2001, *Hood Canal Bridge Retrofit and East Half Replacement, Socio-Economic and Displacement Discipline Report.*

Threatened and Endangered Species/Marine Habitat

Carl Ward and Eric Gower, WSDOT, Hood Canal Retrofit and East Half Replacement, ~~Draft Biological Assessment, January~~ May 2002.

Cindy Callahan, WSDOT, 2000, *Hood Canal Retrofit and East Half Replacement, Geotechnical Borings Biological Assessment.*

Ron Thom, Dana Woodruff, Greg Williams, John Southard. Susan Blanton, Batelle Marine Sciences Laboratory, 2000 & 2001, *Preliminary Mapping and Resource Assessments of Subtidal and Intertidal Habitats in the Vicinity of the Hood Canal Bridge.*

Visual Quality

Ken Schlatter, WSDOT, 2001, *Hood Canal Bridge East-Half Replacement Project, Visual Quality Assessment Report.*

Discipline Studies List

Water Quality

Herrera Environmental Consultants, *Hood Canal Bridge Replacement Project: Water Quality Discipline Report*, 2001.

Steven R. Thompson, P.E., 2001, WSDOT, *Hood Canal Bridge, West Half Retrofit & East Half Replacement: Stormwater Quality Treatment Report: Proposal for Alternative Stormwater Mitigation*.

Other References

Pacific International Engineering, Sverdrup Civil, Inc.-a Jacobs Company 2001, *Hood Canal Bridge, Evaluation of Traffic Mitigation*.

Pacific International Engineering, Sverdrup Civil, Inc., Demich Engineering, and Rick Keisser, 2001, *Hood Canal Bridge Replacement Project, Mitigation Closure Decision Technical Memorandum*.

WSDOT, 2000. *Hood Canal East-Half Replacement Closure Mitigation Plan – Preferred Options*.

Mwint Lwin, O.R. George, Ed Henley, et al. WSDOT, Bridge and Structures Office, October 1997, *William A. Bugge Bridge Replacement Plan for the East-Half Floating Portion*

Appendix H

CIRCULATION LIST

State Route 104

Hood Canal Bridge 104/005.1 (West Half)
104/005.2 (East Half)

Prepared By:
WSDOT Olympic Region

May 2002

Federal Agencies

U.S. Army Corps of Engineers
U.S. Coast Guard
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Navy
National Marine Fisheries Service
Olympic National Forest
Olympic National Park

State Agencies

Eastern Washington University, Archaeological and Historical Services
Washington State Department of Community Development
Washington State Department of Ecology
Washington State Department of Fish & Wildlife
Washington State Department of Natural Resources
Washington State Department of Trade and Economic Development
Washington State Office of Archaeology and Historic Preservation
Washington State Patrol

Local Jurisdictions

City of Bremerton
City of Edmonds
City of Kingston
City of Port Angeles
City of Port Townsend
City of Poulsbo
City of Sequim
Clallum County
Jefferson County
Kitsap County
City of Poulsbo

Indian Tribes

Jamestown S'Klallum
Port Gamble S'Klallum
Skokomish Tribe
Suquamish Tribe

Other Agencies

Clallum Transit
Jefferson Transit
Kitsap Transit
Puget Sound Clean Air Agency
Puget Sound Regional Council

Circulation List

State Legislators 21st District

Senator Paul Shin
Representative Brian Sullivan
Representative Mike Cooper

State Legislators 23rd District

Senator Betti Sheldon
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Senator Jim Hargrove
Representative Jim Buck
Representative Lynn Kessler

State Legislators 26th District

Senator Bob Oke
Representative Brock Jackley
Representative Patricia Lantz

State Legislators 35th District

Senator Tim Sheldon
Representative William Eickmeyer
Representative Kathryn Haigh

Libraries

Clallam County Library – Port Angeles Branch
Clallam County Library – Sequim Branch
Port Townsend Public Library
Poulsbo Public Library
Washington State Library

Organizations

Hood Canal Salmon Enhancement Group

Individuals

Michael J. Anderson, PE

Appendix I

COMMENTS AND RESPONSES

State Route 104

Hood Canal Bridge 104/005.1 (West Half)
104/005.2 (East Half)

Prepared By:
WSDOT Olympic Region

May 2002



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
WASHINGTON HABITAT BRANCH OFFICE
510 Desmond Drive SE/Suite 103
LACEY, WASHINGTON 98503

May 1, 2002

Jeff Sawyer
Washington State Department of Transportation
5720 Capitol Boulevard
P.O. Box 47440
Olympia, Washington 98504

Re: Environmental Assessment for the State Route 104 - Hood Canal Bridge West Half Retrofit
and East Half Replacement Project

Dear Mr. Sawyer,

National Marine Fisheries Service (NMFS) has reviewed the above referenced Environmental
Assessment (EA), and have the following comments:

- 1.1 • The EA makes repeated reference to "BA concurrence" (e.g., Table 5, page 19). WSDOT has determined that the project is likely to adversely affect both Puget Sound (PS) chinook and Hood Canal (HC) summer-run chum salmon, a determination that normally results in formal consultation and the issuance of a Biological Opinion by NMFS. Concurrence is limited to those projects that "may affect, but are not likely to adversely affect" listed species or their critical habitat. A more appropriate term would be "ESA Consultation", as it more accurately reflects the possibility of a formal consultation.
- 1.2 • For construction of the bridge anchors, the method that is preferred by NMFS is Contractor Option 4: Use separate anchor construction site (page 30). Using this method will eliminate the need for handling ESA-listed salmonids that is associated with the use of a graving facility.
- 1.3 • The EA states that, for coho and chum salmon, "very little rearing is expected to occur near the bridge due to the lack of in water structure" (page 34). NMFS disagrees with this statement, as the important habitat structure for rearing juveniles is the substrate and associated vegetation, and the lack of in-water structure has no bearing on the use of the area for rearing. The nearshore area near the bridge is likely to be very important to juvenile salmonids, especially chum and chinook. These juveniles utilize the nearshore as both a foraging area and migration corridor while adults do not associate with any habitat structure.
- 1.4 • The passenger-only ferry (POF) is scheduled for use during the spring and early summer of 2006. While the EA states that the proposed bridge closure has been scheduled during months that are the least critical to salmon reproduction (page 59), NMFS does not agree. During this time of the year, juveniles of both HC chum and PS chinook are migrating through the shallow nearshore habitat of Hood Canal. Since the proposed facilities at both

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- 1.1** Comment noted. Table 5 has been updated in the revised EA.
- 1.2** WSDOT will encourage the use of a separate anchor fabrication facility.
- 1.3** The revised EA will include this information.
- 1.4** Comment noted. The reference to the critical salmon period has been deleted from the revised EA. WSDOT cannot change the schedule for closing the bridge and operating the passenger only ferry. The schedule was created to balance a variety of environmental, economic, engineering, weather, and social considerations. WSDOT will evaluate the candidate vessels and select those that minimize scour and turbidity. Existing criteria used by Washington State Ferries will be evaluated and those that are applicable will be adopted. If existing criteria are not appropriate, new criteria will be developed.

-2-


South Point and Port Gamble are located in shallow nearshore waters, there is a potential to disrupt the out-migration of these juveniles through shading by overwater structures and the turbidity and currents produced by propwash from the POF. If feasible, the schedule should be altered to avoid this critical time of year. If rescheduling is not possible, WSDOT should design and operate the facilities in a manner that does not present barriers to migration and avoids propwash into the shallows. The avoidance of propwash is also important at Port Gamble due to the potential for contaminated sediments at this site.

1.5

- The temporary work bridge will produce a shadow that may disrupt the outmigration of juvenile salmonids. WSDOT should consider design changes that reduce the shadow cast by the structure. NMFS understands that for safety and environmental reasons, steel grating is not an option. However, other measures, such as under-pier lighting, may be sufficient to minimize the impact of the temporary bridge.

Thank you for the opportunity to review this EA. If you have any questions regarding these comments, please contact John Stadler at (360)753-9576.

Sincerely,



Steven W. Landino
Washington Habitat Branch Chief

cc: Mary Gray, FHWA
Eric Gower, WSDOT

- 1.5** Various light permeable surfaces were evaluated but were not feasible to withstand construction practices, such as the weight of heavy equipment or the need to capture debris. WSDOT will consider the installation of artificial lighting under the temporary work bridge during the period of juvenile salmon out-migration.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Western Washington Fish and Wildlife Office
510 Desmond Drive SE, Suite 102
Lacey, Washington 98503
Phone: (360) 753-9440 Fax: (360) 753-9008

APR 18 2002

Daniel Mathis, Division Manager
U.S. Department of Transportation
Federal Highway Administration, Washington Division
Suite 501 Evergreen Plaza
711 South Capitol Way
Olympia, Washington 98501-1284
ATTN: Steve Saxton

RE: Comments on the Environmental Assessment for the State Route 104 - Hood Canal
Bridge West Half Retrofit and East Half Replacement Project (OL 3305)

Dear Mr. Mathis:

The U.S. Fish and Wildlife Service (Service) has reviewed the subject Environmental Assessment and offers the following comments to the Federal Highway Administration. The Service has evaluated the proposed project alternatives for potential impacts to fish and wildlife resources and their habitat, with specific attention to proposed and listed threatened and endangered species under our jurisdiction.

The preferred alternative is to reconstruct the east half of the Hood Canal Bridge to current design standards and upgrade the remainder of the structure. With the exception of the new anchors, all the new structures will be placed in the same location. The bridge footprint will remain the same, and the approach footprints will be widened to 60 feet. The majority of the impacts associated with this project are related to the construction/demolition activities, the construction and placement of the new pontoons and anchors, and temporary passenger ferry terminals.

2.1 The Service understands the safety issues and physical constraints associated with stormwater treatment on the floating bridge. The proposed design will route stormwater away from the near shore and discharge it, untreated, into the deeper waters of Hood Canal. Where practicable, feasible and safe we recommend that the Washington State Department of Transportation consider the implementation of measures, such as a series of filters, that will reduce the input of pollutants associated with stormwater run off.

2.1

2.2 Impacts to eelgrass (*Zostera marina*) beds and Pacific herring (*Clupea harengus pallasii*) spawning habitat will occur with the removal of the un-needed piers and the installation of the temporary work trestle. In addition to the measures listed in the Environmental Assessment (i.e., low tide

2.2

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- 2.1** The Hood Canal Bridge has low pollutant loading. WSDOT researched all available options for treating stormwater runoff from the bridge. The practicability assessment concluded that collection and filtering were not feasible due to the limited effectiveness of the collection and treatment. When filters clog, excess water on the road surface creates a potential safety issue. Concurrence was documented in a technical memorandum to the Department of Ecology dated November 20, 2001, and in Ecology's response dated December 21, 2001.
- 2.2** WSDOT will commit to install and remove temporary work trestles outside the critical herring spawning period, January 15 to April 14 per WDFW.

Comments and Responses

2.3

construction timing), we recommend that the placement and removal of these structures avoid the critical spawning period for the herring. The Service also recommends use of a light permeable surface on the work trestle to further minimize shading impacts for both the eelgrass and salmonid migration.

2.4

Fish entrainment and entrapment are concerns associated with pontoon construction at the graving dock facility. These impacts could be minimized if the flooding and draining of the graving docks occurs outside the out-migration periods of salmonids (including bull trout). The prescribed allowable work window for bull trout (*Salvelinus confluentus*) in marine waters is July 16 through February 15. This is the window of time in which bull trout are least likely to be present in marine waters.

2.5

The temporary passenger only ferry terminals and ferry operation may disrupt the out-migration of chum and chinook salmonids. When practicable and feasible, avoidance of the critical migration time periods should be implemented. Additionally, prop wash and shading may have short term adverse impacts on habitat. To expedite the recovery of the impacted habitat, the Service

2.6


recommends the complete removal of the ferry terminal structures (creosote pilings, wingwalls, etc.) at both terminal locations, when they are no longer needed.

These comments have been prepared under the authority of and in accordance with the provision of the Fish and Wildlife Coordination Act (48 Stat. 401 as amended, 16 U.S.C. et seq.), the Endangered Species Act (ESA), as amended, and other authorities mandating Department of Interior concerns for the environmental values. They are consistent with the National Environmental Policy Act.

Should consultation under the ESA (i.e., Section 7), a U.S. Coast Guard permit (Section 9 of the Rivers and Harbors Act), or an Army Corps of Engineers permit (i.e., Section 404 of the Clean Water Act and or Section 10 of the Rivers and Harbors Act of 1899) be required for your proposed project, we may provide additional comments at that time regarding the proposed permitted action.

If you have any question regarding these comments please contact Jennifer Quan of this office at (360) 753-6047.

Sincerely,


for Ken S. Berg, Manager
Western Washington Fish and Wildlife Office

cc: COE, Seattle (A. Robinson)
NMFS, Lacey (J. Stadler)
WDFW, Olympia (B. Burkle, B. Zeigler)
WSDNR, Olympia (L. Schmidt)
WSDOE, Olympia (P. Betts, K. Craig)
WSDOT - Olympic Region, Tumwater (J. Sawyer, E. Gower)

- 2.3** WSDOT's survey found limited eel grass under the work bridge. Various light permeable work platforms were evaluated and found to be not feasible for this project. A steel grate deck does not provide adequate traction for cranes and other crawlers. They also require more pilings for support and reduce the collection of construction debris. Other light permeable decks cannot support the heavy loads that will be required for this project and are torn apart by heavy equipment. Traditional timber mats absorb and retain construction materials. WSDOT will consider the installation of artificial lighting as suggested by NMFS. See response 1.5.
- 2.4** WSDOT evaluated this suggestion and found it infeasible because of the limited pontoon manufacturing capacity of the graving yard. The project needs to limit the actual bridge construction period to minimize environmental and social impacts and need pontoons to be fabricated to meet this schedule. This means that pontoon production will need to occur outside of the bull trout work window. Per WDFW suggestions, the CTC graving dock will provide intake screens equipped with fish guards and mobile fish booms/barriers for preventing juvenile salmon entry into the graving dock. Also a combination of sheet pile and screen material will be erected vertically along the outer face of the I-beams.
- 2.5** This time period was chosen for numerous socio-economic and weather reasons and is not feasible to change. WSDOT has committed to several local government agencies and the public to have bridge closure during May and June of 2006. See comment 1.4.
- 2.6** The South Point facility will be retained for future bridge maintenance, construction projects, and emergency situations. WSDOT will remove all temporary facilities placed on this project at both sites after construction is complete.

DEPARTMENT OF ECOLOGY

April 19, 2002

Dear Mr. Sawyer:

General Comments

Water Quality

- RECEIVED**

APR 23 2002

OLYMPIC REGION

- 3.1** Construction methods for the in-water bridge work have been thoroughly planned and scrutinized to minimize impacts to Hood Canal. Temporary erosion and sediment control BMPs will be used at the bridge construction site, staging areas, and all the temporary traffic holding facilities. Development and implementation of a spill prevention, control, and countermeasures (SPCC) plan will also be required of the Contractor prior to construction. WSDOT commits to using the BMPs from the Highway Runoff Manual and Temporary Erosion and Spill Control measures. Measures will be monitored by inspectors throughout construction.
- 3.2** No new impervious surfaces are planned as part of the new bridge approaches. After this letter was received, the bridge approaches were re-evaluated. The pavement drains to a curb along the shoulder down to a catch basin. It is discharged through a shoulder drain to forested areas. The forested areas are heavily vegetated and no channels or scour are visible. Most of the runoff infiltrates into the forest duff, which is a good media for quality treatment.
- 3.3** Comment noted.
- 3.4** Comment noted. Construction activities are expected to disturb less than five acres.

Jeff Sawyer
4/19/2002
Page 2

Shoreline

3.5

- Under Impacts of the proposed action, construction (page 37,) there is very brief discussion of (presently unidentified) location of the "anchor fabrication facility." In addition to the water environment impacts mentioned, this and other construction activities will have impacts to riparian habitat along the shoreline.

3.6

- More specificity needs to be provided about what the shoreline habitat impacts of all temporary and long term structures will be. Descriptions of how impacts to riparian habitat will be minimized are needed, and details about changes in grade and vegetative restoration subsequent to bridge construction. Mitigation plans, which are mentioned in the text but were not provided for this review, need to specify the types and numbers of native species plantings planned once construction is complete, and a schedule for that activity identified.

3.7

- Site plans for the project need to illustrate existing conditions, including topography and vegetation relative to infrastructure. For comparison, site plans need to also show the areas of the shoreline that will be affected, and how they will be altered both temporarily (during construction) and long term.

3.8

- There is a great deal of recreational use in Hood Canal. There is little information on impacts to recreational activities in the area of construction. Will there be a proposed closure zone? How will the movement of barges and equipment affect the use of the area, both along the shoreline and in the vicinity of the bridge? WSDOT should provide detail on these potential impacts to recreation activities.

Groundwater Areas

3.9

- The EA should address the potential for the proposal and any alternatives to impact the groundwater recharge areas and the wellhead areas. It should also discuss the possible mitigation measures to eliminate or reduce any impacts that may be expected.

Hazardous Materials

3.10

- Potential impacts include encountering and disposing of petroleum-contaminated and metal-contaminated soils; removal and disposal of asbestos-contaminated material and lead-based paint (LBP) from structures that will need to be demolished; removal and disposal of some LBP from the existing bridge; and the need to remove and dispose of potential unknown contaminants in soils, fill and other areas associated with the project activities. Please explain the procedures that will be employed for LBP removal, containment and disposal, and the cleanup options being considered for contaminated soils in the EA.

- 3.5** The site has not yet been selected. WSDOT expects that anchor fabrication will occur in an existing industrial waterfront area.
- 3.6** The requested level of detail will be addressed in the design and permitting stages.
- 3.7** See comment 3.6.
- 3.8** Construction work will have only a minimal effect on recreation activities. There may be areas close to the bridge that are closed to boaters when demolition, anchor placement, or pontoon placement activities occur. These would affect only a small area and be of minimum duration. Navigation passage will be maintained, consistent with Coast Guard permit conditions.
- 3.9** There is little potential for normal construction activities to impact groundwater. There are no public or private wellheads in direct contact or within 200 feet of the construction staging area at the bridge. Runoff from the staging area flows toward the Hood Canal shoreline and therefore would not be likely to affect groundwater wells.
- 3.10** Prior to construction, WSDOT will perform further studies to determine the locations of affected lead based paint and the location and extent of lead contaminated soils in the project area. Lead-contaminated soils will require stockpiling and testing to assess the regulatory classification of the soil and the associated most cost-effective management option. Depending on analysis results, soils may either be disposed as a hazardous waste; disposed at a local landfill facility; or if suitable used as construction fill material. Generally, if soils contain greater than 250 mg/kg for total lead and/or if soils analyzed for toxic characteristics leaching procedure (TCLP) show levels greater than 5 mg/kg lead, they must be managed as hazardous waste. If other unknown contaminants are encountered, they will be treated with established hazardous material procedures.

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Construction Methods

- 3.11
- The construction methods lack the necessary detailed information in a number of areas (i.e. construction and demolition debris containment and disposal associated with the dismantling of the old structures, construction and demolition debris associated with the widening of the west half superstructure, and with the east and west approach spans; best management practices associated with the construction, operation and maintenance of the temporary park and rides, and ferry facilities). This project consists of multiple projects and warrants site-specific information for each of the projects activities. A variety of best management practices (BMP) may be necessary and require maintenance during those construction activities.

Specific Comments

- 3.12
- Page 11, Traffic on Highway 101 is anticipated to increase substantially. What type of mitigation measures are in store for the increase in highway runoff? What stormwater collection and treatment improvements will be considered as a part of enhancing US 101?
- 3.13
- Page 13, Its stated that it may be necessary to widen SR 104 at its intersections with the access road to the gravel pit for left turn channelization. What stormwater collection and treatment improvements will be considered as a part of widening SR 104?
- 3.14
- Page 12-14, WSDOT should coordinate the temporary ferry facilities construction and operation activities with the Ferry Terminal Engineer Division. WSF implemented excellent BMP's with the Fauntleroy Ferry Terminal Refurbishment Project. You should contact Sasha Visconty, Project Manager, for more details about implementing similar BMP's.
- 3.15
- Page 12-14, Stormwater collection and treatment should be incorporated into the temporary construction and operation plans for the passenger-only ferries (POF) and the park and rides.
- 3.16
- Page 16, Identifies... "Threatened and Endangered Species/Marine Habitat" as a major project issue, however, other aquatic resources and habitats are not mentioned as either a major or minor issue. Please identify and discuss all potentially affected aquatic resources and habitats.
- 3.17
- Page 19, Table 5: Anticipated Permits and Concurrence; The Shoreline Substantial Permits are issued by the Counties and then the Counties submit the permits to Ecology. The table should reflect Ecology in the Agency box for that permit.
- 3.18
- Page 22-23, WSDOT should build into their project construction staging schedules contingency plans that take in consideration unanticipated events that may affect the work schedule. For example, contingency measures for extreme weather conditions that may produce high winds and high water flows that may affect the demolition activities, the construction debris and lead paint removal and containment process, removal of the cement pilings and containment and timing of construction activities.

- 3.11** Demolition debris on the West Half Hood Canal Bridge will be loaded onto trucks parked on the pontoons. Demolition debris on the approach spans will also be loaded onto trucks parked at the site or on the work bridge. The trucks will remove the debris to an approved disposal site. BMPs will capture all debris on the bridge. Debris will be contained consistent with the Ecology implementing agreement, "Regarding Compliance with the State of Washington Surface Water Quality Standards, February 13, 1998". Appropriate BMPs will be used at the park and ride lots and POF terminals.
- 3.12** The SR 101 enhancement will be covered by a separate environmental document. Addition of permanent impervious surfaces, if any, will be treated as per the Highway Runoff Manual.
- 3.13** At this time WSDOT is not planning to widen SR 104. Due to the decrease in traffic, turn lanes will not be required. If new permanent impervious surfaces are added, stormwater would be treated as per the Highway Runoff Manual.
- 3.14** BMPs and conservation measures used by WSF for construction projects will be evaluated for relevance to construction of temporary facilities and appropriate measures incorporated into the contract.
- 3.15** Comment noted. Compost berms will be utilized at South Point and Port Gamble. Stormwater from the Shine Pit site will be infiltrated after pretreatment to remove pollutants to protect the aquifer. For the remainder of the sites, WSDOT will connect with an existing stormwater system and will place a compost berm around the perimeter. The berms will contain all stormwater on-site or slowly filter the stormwater through the compost. Compost will remove total suspended sediments and capture dissolved heavy metals in the runoff. Street sweeping is also proposed as a BMP at all temporary holding sites. The site will be cleaned and swept before the facility goes into use, and swept again after the eight week period is over.
- 3.16** Even though threatened and endangered species are not included on page 16 of the Environmental Assessment, these species were discussed under the Impacts of the Proposed Action on page 32.
- 3.17** Comment noted. Table 5 has been revised.
- 3.18** The schedule incorporates time for potential delays because of storms and other winter weather conditions. Most of the construction work will occur between April and October, except when necessary to avoid fish or habitat impacts.

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- 3.19** | Page 26, WSDOT needs to provide detail on the construction and demolition activities associated with the widening of the west half superstructure. How will construction debris and materials be contained so as not to enter the water or cause water quality degradation to state waters? How will construction debris and materials be removed from the bridge? How will the cement pieces be contained during the removal process?
- 3.20** | Page 27 & 31, WSDOT needs to provide detail on the construction and demolition activities associated with the east/west approach spans and truss transition spans. How will construction debris and materials be contained so as not to enter the water or cause water quality degradation to state waters? How will construction debris and materials be removed from the bridge? How will the cement pilings be removed and/or demolished?
- 3.21** | How will the cement pieces be contained during the removal process? Will there be the potential for cement slurry, and if so, how will it be contained?
- 3.22** | Page 37, WSDOT should coordinate with Ferry Terminal Engineering Division to implement good eelgrass and kelp protection and conservation measures that could be utilized as a part of this project.
- 3.23** | Page 38, WSDOT needs to provide more detail on the installation of 150 pilings. For example, type of pilings, type of pile driving installation, time to install each piling, and duration of this activity. We recommend that WSDOT use ferry terminal construction measures to minimize impacts associated with pile driving installations.
- 3.24** | Page 39, WSDOT needs to provide site-specific detail on the critical habitat protection measures that will be incorporated into the design.
- 3.25** | Page 39, WSDOT needs to re-evaluate the proposed mitigation replacement for seabed loss. How can a "net gain" of less than 900 square feet of substrate from the removal of footings and associated piers offset the losses of .92 acres of seabed from the new anchors?
- Page 42, WSDOT should provide details on the mitigation measures for the loss of .92 acres of substrate due to the permanent placement of anchors.
- 3.26** | Page 55, WSDOT needs to provide spill prevention and containment detail on the fuel storage tanks on the bridge.
- 3.27** | Page 55-56, WSDOT should coordinate with Ecology's SWRO, Toxic Cleanup Program, to further evaluate the use of Port Gamble. There may be an opportunity to implement the FHWA's Transportation and Brownfields Policy.
- 3.28** | Page 64 & 66, The EA mentions that there is no potential wellhead area of impact in the project boundary for two wells whose buffer zones intersect the project area. The EA should address the potential for the proposal and any alternatives to impact the other two groundwater recharge areas that the EA identified as being within the project boundary.

- 3.19** The debris will be collected and contained with tarps and dump trucks from the pontoon deck below the superstructure. The work bridge will allow work over Hood Canal waters without extensive barge activity and the associated turbidity.
- 3.20** The construction and demolition material will be collected on a work bridge where it will be loaded onto trucks on the work trestle and removed from the site.
- 3.21** The piers will be taken apart in chunks and hauled away. A special machine will "crunch" down the concrete and load it onto waiting dump trucks. Barriers will be placed to assure that no concrete falls into the water. There will be no "cement" slurry.
- 3.22** WSDOT will review the Ferry Terminal Office use of BMPs and apply them to this project as appropriate.
- 3.23** Detail on the installation of piling (types, duration, time for installation) will be provided during the permitting phase. WSDOT will evaluate WSF construction methods to minimize impacts and adopt them, if applicable for temporary structures.
- 3.24** WSDOT has proposed conservation measures for this project in the BA. These conservation measures will be updated every six months. If the proposed project activities change, consultation will be reinitiated.
- 3.25** The 900 sq ft gained is intertidal habitat that will provide critical habitat for affected Endangered Species Act (ESA) species. The 0.92 acre loss is in deep water. There is no proposed mitigation for this impact. While each habitat provides different ecosystem functions, WSDOT believes that this tradeoff provides adequate mitigation.
- 3.26** WSDOT will replace the existing tanks with new fuel storage tanks in containment areas that meet current EPA standards. The bridge will also be evaluated for potential vehicular traffic spill hazards. Initial response and preventative measures will be implemented for any identified spill hazards. Spill response materials will be stored onsite.
- 3.27** WSDOT will coordinate with Ecology to minimize construction impacts. WSDOT is only leasing the Port Gamble site. WSDOT will share relevant information found as part of bridge closure mitigation. Because the site is being leased, it does not fit within the Brownfields Policy that encourages the rehabilitation of abandoned property acquired for projects. WSDOT will assure that this project does not create new hazardous material impacts and will provide incidental cleanup
- 3.28** See response 3.9.

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Page 68, WSDOT needs to evaluate and implement spills prevention and containment for the bridge.

3.29

Page 69, the secondary and cumulative impacts section summary consists of more than just ESA; you should provide additional summary material for a number of areas (i.e., threatened species/marine habitat, air quality, groundwater, etc.).

If you have any questions, please contact me at (360) 407-6056 or at kcra461@ecy.wa.gov.

Sincerely,


Kelly Craig, Project Manager
Environmental Coordination Section

KC:mw

cc: Tim Battin, Corps Seattle
Harjit Bhalla, WSDOT OL
Bob Burkle, WDFW Region 6
Sean Callahan, Ecology NWRO
Rebecca Inman, Ecology HQ
Sandra Lange, Ecology NWRO
Yvonne Oliva, Ecology HQ (files)
Jennifer Quan, USFWS
Kari Rokstad, Ecology SWRO
Lindie Schmidt, WDNR SWRO
John Stadler, NMFS
Jeff Stewart, Ecology SWRO

- 3.29** As stated in the EA, there will be no secondary or cumulative impacts as a result of this project. No new capacity will be created. The new/rehabilitated structure will function as the existing structure does today. It will not cause or deter population growth or development. The only potential cumulative impact is from the modification of .92 acre of deep water habitat used by the new anchors.



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Region 6 Office: 48 Devonshire Road - Montesano, Washington 98563-9618 - (360) 249-4628

April 17, 2002

WSDOT, Olympic Region
ATTENTION: Randy Hain, Region Administrator
Post Office Box 47440
Olympia, Washington 98504-7440

Dear Mr. Hain:

SUBJECT: Environmental Assessment; WSDOT Proponent, Hood Canal Bridge West Half Retrofit and East Half Replacement

The Washington Department of Fish and Wildlife (WDFW) has reviewed the above-referenced EA received on March 22, 2002, and offers the following comments at this time. Other comments may be offered as the project progresses.

4.1 The Environmental Assessment does one the better jobs we have seen at identifying potential impacts up front. Because of involvement of our staff in previous meetings, impact identification was facilitated. The one statement that kind of stands out as inadequate is the assessment of the value of juvenile salmonid habitat on page 34. This habitat, as it contains both eelgrass and intertidal mudflats, is critical to migrating juvenile salmonids, especially ESA listed summer chum and puget sound chinook. Both of these habitats are high quality in the vicinity of the east end of the bridge, and can be expected to be utilized from February 15 through July 14.

4.2 Also, recent observations this year have confirmed that herring are spawning on eelgrass beds and other macroalgae substrates, including those growing on the bridge, both at the project site and to the north and south. Herring spawn from January 15 through April 14.

4.3 To protect fish while they are using these critical habitats work below the ordinary high water line in intertidal and shallow subtidal areas can only occur from July 15 to January 14 of the following year. However, work in deep water, such as placing anchors and floating bridge pontoons into position, may occur year round without impacting these resources. In addition, as

4.4 as long as BMPs that strictly prevent spills of debris or toxic materials such as petroleum products and wet concrete are employed, work can occur on the structure both above the ordinary high water line and inside of caissons year round.

4.5 Impacts Identified in the Assessment:

4.6 The access road to the temporary construction bridge will remove some shoreline conifers. **RECEIVED** along the shoreline to provide habitat may be worth discussing. The area will

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- 4.1 This is true. The nearshore area is critical for juvenile salmonid migration and rearing. There will be no nearshore (< -20 ft MLLW) in-water work between February 15 through July 14. Work in depths (> -20 ft MLLW) may occur year-round.
- 4.2 Comment noted.
- 4.3 WSDOT will commit to working within the fish windows below the mean high-high (MHHW) water line.
- 4.4 Comment noted.
- 4.5 Comment noted.
- 4.6 WSDOT will commit to revegetate the access road as requested.

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- need to be re-vegetated with native conifers and other appropriate species after construction is completed.
- 4.7 Anchors will cover almost an acre of deep subtidal habitat - 95 to 300 feet plus - with 20 new bridge anchors - mitigation is needed. This may need to take some other form than on-site/in-kind due to the impracticability of removing existing anchors.
- 4.8 The rebuild will reduce the footprint of the bridge supports in the intertidal zone by about 400 square feet. This plus timing restrictions and BMPs will mitigate most temporary construction impacts, except possibly shading impacts from the temporary work bridge.
- 4.9 The EA states on page 40: "WSDOT will provide possible conservation measures at the graving dock (Tacoma) while Hood Canal Bridge pontoons are being fabricated. These measures may include . . . netting to exclude fish from the graving dock facilities. To prevent the possibility of take, a monitoring plan will be developed to ensure no fish are stranded during the pontoon removal process and flooding/ebbing tidal fluctuations." This may mitigate pontoon construction impacts. These impacts could be further reduced by scheduling construction at the ends of salmon outmigration, which occurs from February 15 through August 14 in Commencement Bay (Commencement Bay is home to the White River Spring Chinook, ESA listed as endangered). Migration peaks from mid-March to mid-June, and numbers are especially high in April and May, so if pontoons can be launched at other times many more fish would be avoided.
- 4.10 Resources nearby include herring spawning on eelgrass at the bridge location, and both north and south of the bridge on the east end. Three ESA listed species of salmonids also use the shoreline area for rearing, feeding, migration, and escape from predators. There are geoduck leases near the area but WSDOT had divers check where there might be potential conflicts. The one potential area was in 95 feet of water and had 6 inches of soft substrate over bedrock. They found no sign of geoduck in this environment and thus did not need to include geoduck in the assessment. Bottomfish, especially ling cod and rockfish, would be aggregated by the additional anchors and would become more susceptible to fishing impacts.
- 4.11 The new bridge would not include fishing access because of US Navy security concerns, because of the impracticability of providing ADA access, because of potential vandalism, and because of liability issues.
- Elements not fully evaluated
- We feel that the loss of this unique fishing access needs to be mitigated, likely by construction of a suitable fishing pier in the vicinity of the bridge. This is not addressed in the EA.

- 4.7** See Response 3.25.
- 4.8** Comment noted. The footprint will reduce the footprint of the bridge supports in the intertidal zone by about 900 sq ft.
- 4.9** See response to 2.4.
- 4.10** Comment noted.
- 4.11** Per the agreement with WDFW, WSDOT is not required to provide replacement for the temporary fishing access. WSDOT will continue to work with WDFW to reach a satisfactory outcome.

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4.12

The temporary work bridge may present a deterrent to juvenile salmonid migration as proposed. If the height of the bridge can be increased, and grating can be added to bring light under the bridge up to 60% of ambient, then salmonids will be able to migrate and utilize the habitat under the bridge effectively. An increase in height also effectively removes fish from disturbance. Ideally height above MHHW should be equal to width, but any increase in height combined with grating will help.

4.13

Anchor construction locations and delivery techniques are not finalized. If these can be constructed upland and launched in a manner similar to that done last time impacts would be largely avoided.

4.14

We have expressed concern over possible increase in PAH's as a result of oil entering with stormwater and potential spills. We were unable to get stormwater treatment as it was determined to be impracticable by DOE. We have asked for spill response and containment process. Recent studies have shown sublethal and lethal impacts from much smaller quantities of PAH than previously known: less than 1 part per billion being harmful to early stages of development of herring (1).

Recent studies have also demonstrated impact of PAH in creosote-treated piling on herring. One study done on 51-year old creosote-treated piling showed herring embryos on the treated wood failed to develop (2). Studies also indicate that PAHs are dangerous for juvenile salmonids. WSDOT would have an opportunity to reduce this source of PAH impact by removing creosote treated piling now in place at their temporary ferry terminal at South Point when the bridge is fully constructed, as mitigation for temporary impacts to the juvenile salmonid migration corridor from the installation and operation of the terminal. They could also remove old creosote piling at Port Gamble in the vicinity of the Port Gamble temporary ferry landing (Port Gamble Bay is a documented herring spawning area) as mitigation for the short term terminal impacts to salmonid migration and spawning herring, but this would need to be coordinated with the National Park Service due to the National Historical Site designation of Port Gamble. Alternatively, there may be opportunities to improve habitat, water quality, and eelgrass beds by removing the layer of subtidal wood waste from years of log rafting around the Port Gamble mill site. The creosote treated fendering system on the bridge may also be replaced with a synthetic system as mitigation.

Finally, the installation of a new anchoring system over a wider area will nearly double the artificial reef type habitat in the project area. This will attract rockfish, which will likely be targeted by fishermen, or caught incidentally by fishermen targeting other species, such as ling cod. At the depths of these anchors catch and release of rockfish is fatal, as their swim bladders distend and prevent them from leaving the surface when released. WDFW policy is to close

- 4.12** See Responses 1.5 and 2.3 regarding grated decks. Increasing the height of the work bridge will require additional piers for strength and make it more difficult to effectively contain construction and demolition debris.
- 4.13** The anchor fabrication site has not yet been identified but avoidance and minimization of environmental impacts will be a factor in site selection.
- 4.14** See Response 5.3 regarding potential PAH impacts from the bridge. See Response 2.6 for South Point. Port Gamble is privately owned. WSDOT is leasing this site. Port Gamble is a MTCA site and is currently being characterized by a consultant. WSDOT will not be participating in the cleanup. We will remove the temporary items that are installed during construction. Removing the wood waste layer could expose and stir up contaminated sediments. WSDOT would consider replacing the creosote fendering system on the bridge with a synthetic one as possible mitigation.


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4.15

fishing on artificial reefs. DOT has additionally stated that they would like fishing from a boat or using SCUBA closed over their anchoring system, to prevent gear entanglement, ghost nets, ghost shrimp and crab pots, and diving to retrieve this gear. If this is the direction that needs to be taken, the loss of this fishing area will need to be mitigated, possibly with a boating access project.

Thank you for the opportunity to provide these comments. If you have any questions, please contact me at (360) 249-1217.

Sincerely,



Robert L. Burkle
Assistant Habitat Program Manager

RLB:rlb

cc: SEPA Coordinator, WDFW
SEPA Coordinator, Ecology
Bob Zeigler, Steve Kalinowski, Thom Johnson, Steve Sherlock, WDFW
John Stadler, NMFS Olympia
Jennifer Quan, USFWS Olympia

(1) EXXON VALDEZ OIL SPILL: Ten Years Later, Technical Background Paper for Alaska Wilderness League
by Pamela A. Miller, Arctic Connections 3/99 <http://arcticcircle.uconn.edu/SEEJ/Alaska/miller2.htm>

"New studies by the National Marine Fisheries Service show that even very low levels of weathered Exxon Valdez oil (0.5 to 1 part per billion PAH's) are toxic at the early life stages of salmon and herring.[21] Heintz, R.A., J.W. Short, and S.D. Rice, 1999."

(2) Vines, C.A., Robbins, T.R., Griffin, F.J. Cherr, G. N. 2000. The effects of diffusible creosote-derived compounds on development in Pacific herring (*Clupea pallasii*):

On creosote-treated pilings were placed in Fort Baker Marina in the 1950's and had undergone substantial weathering. All embryos adhering to creosote treated wood and 40-59% of embryos not adhering to the creosote-treated wood failed to develop beyond the first few days of incubation. The hatching rate of embryos exposed to creosote was 90% lower than control embryos and 72.4% lower than embryos exposed to untreated wood and the LC50 for hatching success was 0.05 mg/l. All the hatched larvae exposed as embryos to creosote exhibited morphological deformities.

4.15 There is no mitigation required for this impact.



WASHINGTON STATE DEPARTMENT OF
Natural Resources

DOUG SUTHERLAND
Commissioner of Public Lands

April 22, 2002

Mr. Jeff Sawyer
Department of Transportation
PO Box 47440
Olympia, WA 98504-7440
Fax: (360) 357-2601
SawyerJ@wsdot.wa.gov

Subject: Comments on the Hood Canal Bridge West Half Retrofit and East Half Replacement Environmental Assessment.

Dear Mr. Sawyer:

5.1

Thank you for this opportunity to comment on the Hood Canal replacement project. The Hood Canal Bridge replacement project is a complex project with many component issues. The Environmental Assessment does not provide enough information for substantive comment on some major components of your plans such as the graving docks and hazardous material removal.

5.2

The Department of Transportation has made considerable efforts to mitigate the bridge impacts through design modifications and the construction and demolition techniques utilized. However, additional specifics on the extent of the areas and resources impacted by the bridge, the construction process, and the traffic mitigation plan will be necessary before complete comments can be provided. Some concerns about the long-term effects of road runoff, impacts to harvestable marine resources, and recreational use of State-owned aquatic lands are included below.

5.3

The traffic on SR 104 and the bridge has more than doubled since the construction of the bridge. Since the Department of Transportation (DOT) is making plans for the eventual upgrade of the bridge to meet future traffic demands, we would like to know what plans are being made to deal with the additional runoff such traffic will create. Road runoff contains a variety of chemicals, many of which are detrimental to the environment. Since the Hood Canal floating bridge and the approach spans are limited in their capacity to contain and treat runoff, the plan to sweep the bridge and tightline pipe stormwater away from intertidal areas is an acceptable way to reduce nearshore impacts from bridge runoff.

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SOUTH PUGET SOUND REGION ■ 950 FARMAN AVE N ■ ENUMCLAW, WA 98022-9282

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- 5.1** See response 4.10 regarding hazardous materials. All BMPs to protect juvenile salmon will be incorporated into the operation of the graving yard. Despite these precautions, use of the CTC graving yard in the Blair Waterway may impact juvenile salmon. Formal consultation, if required, with resource agencies will be done to minimize impacts before construction begins. Resource agencies will continue to be consulted during the pontoon fabrication process.
- 5.2** The EA has adequately identified and addressed the environmental impacts of the bridge replacement and related issues per NEPA and SEPA requirements. The requested level of detail will be addressed in the design and permitting stages.
- 5.3** If and when the bridge is widened to four lanes, the issue of treating additional stormwater runoff will be reevaluated.

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However, in the SEPA document you indicate that:

Presently, runoff from the upland roadway areas immediately adjacent to the east and west approaches is conveyed down the slopes to the Hood Canal.

5.4

The disposal of untreated stormwater on state-owned aquatic lands, where upland alternatives are available, poses a concern that must be addressed. Studies involving oil pollution were initiated in Prince William Sound by the Auke Bay Laboratory. Their findings indicate that the toxicity of oil pollution to aquatic populations has been seriously underestimated by standard short-term toxicity assays and that the habitat damage that results from oil contamination has been correspondingly underestimated. In the Auke Bay studies, herring eggs exposed to solutions of polycyclic aromatic hydrocarbons (PAH) in aqueous concentrations of 0.4 ppb exhibited increased mortality and structural and genetic abnormalities. Herring are known to spawn in the vicinity of the Hood Canal Bridge and are a forage fish for salmon.

5.5

The Hood Canal is a rich ecological system with a variety of harvestable natural resources including geoducks. Almost an acre of substrate will be permanently modified by the placement of anchors; there will also be temporary impacts from construction. The extent of damages to harvestable portions of geoduck tracts will need to be completely assessed and DOT will have to make reparations for damages caused by construction activities and permanent improvements associated with the bridge.

5.6

The Hood Canal is heavily utilized by fish species and serves as a migratory route for salmon. Fishing nets that break loose from commercial operations are a hazard to aquatic life. Since the bridge anchor cables are regularly inspected, the Department of Natural Resources (DNR) requests that DOT commit to removing any nets which may become tangled in the anchor cables and disposing of these nets at an upland location.

5.7

A temporary fishing facility currently exists on the east half of the bridge below the bridge deck on a pontoon. This fishing facility will be removed and not be replaced during the upgrade. The Department of Natural Resources would like to work with DOT and the Department of Fish and Wildlife (WDFW) to mitigate the loss of this recreational facility at an alternate site. One possibility exists at South Point. The Department of Transportation intends to maintain the passenger only ferry terminal at South Point after the replacement of the bridge for use in future replacements. If WDFW determines this location is appropriate for a recreational fishing site, it might be modified for public access.

- 5.4** There is a considerable difference between the PAH's most commonly associated with highway runoff and the PAH's in creosote treated piling or crude oil. PAH's are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. Some PAH's are manufactured. These pure PAH's usually exist as colorless, white, or pale yellow-green solids, and are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides.

WSDOT does not believe PAH's from the Hood Canal Bridge are a threat to herring eggs. A literature review found no studies to substantiate this concern. Most laboratory studies involve extended exposures of relatively high concentrations of specific PAH. While controlled laboratory experiments found heavy molecular weight PAH's to be harmful to herring eggs, those same studies could not reach the same conclusions in the field. The PAH's used in those laboratory experiments are not the same PAH's typically found in highway runoff. Also the PAH's typically found in highway runoff have a much lower molecular weight and much shorter half-lives than those PAH's tested in the herring egg studies.

- 5.5** WSDOT will cooperate with DNR to determine any damages to geoduck beds.
- 5.6** WSDOT had tried to remove these fish nets in the past but was unable to because the marine growth falls off the nets when lifted from the water. Ecology has requested WSDOT to contain the marine growth, remove it with the nets, and haul it to a landfill. This has proven to be a difficult task. Getting permits to do maintenance and preservation on anchor cables in Hood Canal has been very time consuming, costly and in some cases impossible.
- 5.7** Local covenants at this location do not allow for this use. WSDOT intends to use this site in the future in the event of another planned or emergency bridge closure. It will be maintained for this purpose. WSDOT will continue to work with WDFW regarding this issue.

Comments and Responses

Mr. Jeff Sawyer
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5.8

The Department of Natural Resources has related issues to address. The Department of Transportation maintains an easement with the DNR at Lofall for a ferry terminal. In 1983 DOT indicated that they were going to remove the ferry terminal improvements and abandon the site to the Lofall Community Corporation. Since the Lofall easement is no longer useful to DOT because of the limited parking and potential disruptions to the surrounding residential area, the DNR will be terminating the easement. Also, DOT had a lease for four 9-pile dolphins and four anchors to moor Hood Canal Bridge pontoons. The lease, number 20-012799, expired June 1, 1995. The Department of Transportation will need to work with DNR to establish a new authorization if they intend to continue to use this area.

5.9

Again, thank you for this opportunity to comment. If you have any questions, please contact me at (360) 825-1631.

Sincerely,

Lindie Schmidt

Lindie Schmidt
Aquatic Land Manager

c: Mark Mauren
Hugo Florez
Jeff Shreck
Region File
Aquatic Resources File

fm/HoodCanalSEPACcomment

5.8 This is acceptable to WSDOT.

5.9 Dolphins and anchors will be removed from this site.



Working Together For Clean Air

April 1, 2002

Randy Hain, Region Administrator
WSDOT, Olympic Region
PO Box 47440
Olympia, WA 98504-7440

Environmental Assessment (EA) SR 104 Hood Canal Bridge
West-Half Retrofit & East-Half Replacement

Thank you for the opportunity to comment on this EA. We appreciate WSDOT's air quality mitigation measures including the congestion relief scheduled for US 101 and the project's dust control management plan. The following 2 comments on this project are intended to help the project decision-makers protect public health by making well informed air quality decisions.

EXECUTIVE DIRECTOR
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Bill Bearsma, Mayor

Bill Evans, Councilman, Board Chair

6.1
SNOHOMISH

Jeff Cox, Councilman

SEATTLE

Gregory J. Nickels, Mayor

KING COUNTY EXECUTIVE

Ron Sims

KITSAP COUNTY COMMISSIONER

6.2

PIERCE COUNTY EXECUTIVE

John Ladenburg

EVERETT

Edward D. Hain

6.3

BREMERTON

Cary Bozeman, Mayor

MEMBER AT LARGE

Janet Chaloupek

First, the EA characterizes air quality impacts as a minor project issue and predicts a temporary increase in carbon monoxide and nitrogen oxide emissions from construction equipment operations. The EA does not address the additional public health risks resulting from increased toxic air pollutants and fine particle emissions emitted by diesel-powered trucks, construction equipment, marine vessels, and shuttle buses operating during the construction period of this project. The EPA and the State of California have listed over 40 diesel exhaust constituents as probable and known human carcinogens, reproductive toxicants, and endocrine disrupters. Fine particulate emissions are also linked to human cancer as well as inducing asthma, exacerbating asthma attacks, and in general causing decreased lung function. Sensitive groups such as young children, the elderly, and people with existing respiratory problems are especially vulnerable to these emissions.

For these reasons, the forthcoming EIS should consider the public health risk from toxics and fine particulate emissions and assess the benefits of using cleaner fuels as an alternative. For example, haul trucks and shuttle buses using ultra-low sulfur diesel fuel and equipped with after-treatment technology can reduce toxic and fine particulate emissions by up to 90%.

Second, the EA identifies some suspect asbestos-containing materials (ACM) and recommends having a formal asbestos survey conducted prior to construction activities. The Agency's asbestos standards define this project as a demolition, which requires that a Notice of Intent to Perform a Demolition be filed with the Agency and a survey be conducted by an Asbestos Hazard Emergency Response Act (AHERA) building inspector. Also all friable ACM must be removed prior to demolition.

If you have questions or need more information, please call me at (206) 689-4025 or e-mail to tomh@psc-cleanair.org.

Sincerely,

Thomas J. Hudson
Air Resource Specialist

TJH/lh

cc: Steve Saxton, Transp. & Environ. Engr.
Federal Highway Administration
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Olympia, WA 98501-1284

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- 6.1 FHWA does not believe that it is useful or appropriate to analyze air toxics impacts at the project level at this time as it is not yet a legal requirement. The influence of this project on air toxics cannot currently be estimated in any meaningful way. Were it possible to generate credible estimates of whether emissions of these compounds increase or decrease, we still would not know whether these emission levels are likely to adversely impact health. In addition, there is a lack of monitoring or analysis techniques to validate any assessment. This would not help the NEPA decision maker or the public understand whether exposure to some level of emissions resulting from the project is harmful.
- 6.2 WSDOT will use local transit agency rolling stock rather than purchasing vehicles specifically for this purpose.
- 6.3 Comment noted. A notice of intent will be filed with PSCAA prior to construction activities begin. A formal survey will be conducted for asbestos containing materials to delineate for proper abatement and disposal.



April 23, 2002

Randy Hain, Region Administrator
WSDOT Olympic Region
PO Box 47440
5720 Capital Boulevard
Olympia, WA 98504-7440

Dear Randy,

We have reviewed the State Route 104 Hood Canal Bridge West Half Retrofit and East Half Replacement Environmental Assessment dated March 2002. HCSEG supports WSDOT's effort to maintain and replace this structure. We realize that there will be some negative impacts on the environment that result from the reconstruction of the wharfs at both the passenger ferry landing locations. Some of these impacts can be mitigated on site and some of these impacts may be more effectively mitigated by improving habitat to threatened Salmon species off site. The purpose of this letter is to suggest and offer an opportunity for WSDOT and FHA to participate in an off site mitigation opportunity that is within the project impact area.

7.1

For the last year, HCSEG, Jefferson County, Jefferson Conservation District and the Point No Point Treaty Council have been investigating the restoration of the Shine Creek Estuary. When South Point Road was built, the estuary was filled and a stream corridor of approximately 60 to 100 feet width was replaced by two 30" concrete culverts. The two culverts have severely restricted salt water from reaching the 53 acre wetland on the West side of South Point Road. Salt marsh habitat is extremely beneficial to all Salmon species, especially the Summer Chum and Chinook, which are both ESA listed species. Our partnership wishes to replace these culverts with a short bridge of approximately 60 feet in length.

7.2

The project you propose has the potential of directly impacting Shine Creek directly in two ways. First, your contractors will be using substantial amounts of gravel from the Fred Hill Gravel Pit. Local property owners have told us that the Fred Hill Gravel Pit has been a major source of turbidity in Shine Creek. Increased operations at the pit to produce the gravel required for the HCBR project will further impact Shine Creek. Realizing that some impacts are unavoidable, it is our desire that WSDOT require gravel mining practices of their contractors and subcontractors to minimize turbidity. Second, South Point Road will experience a substantial increase in traffic during the bridge closure and terminal construction period. There are presently no storm water runoff

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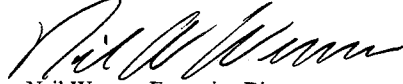
- 7.1** This project is not anticipated to impact Shine Inlet or any other estuary or wetlands. Participation in the estuary restoration is beyond the scope of on-site in-kind project mitigation.
- 7.2** The operators of the gravel pit are required to have their own NPDES permit and use BMPs. Ecology is responsible for monitoring and enforcement.

7.3

measures in the watershed to protect the creek from storm water runoff contaminants originating from vehicular traffic. We acknowledge that the impacts to the stream and wildlife will be minimal, but they will exist.

We request that WSDOT and the FHA participate as a partner in the Shine Creek Estuary Restoration as either direct mitigation or as off site mitigation. We estimate that the total project cost for planning, design and construction of the new roadway and bridge will be approximately \$900,000. The partnership would like to meet with WSDOT and FHA to discuss the opportunity of restoring the Shine Creek Estuary.

Sincerely



Neil Werner, Executive Director
Hood Canal Salmon Enhancement Group

7.3 This mitigation proposal is outside the scope of this project.

March 22, 2002

Rand Hain
Olympic Region Administrator
WSDOT,
P.O. Box 47440
Olympia, WA 98504-7440

SUBJECT: PROPOSED CLOSURE OF HOOD CANAL BRIDGE
STATE OF WASHINGTON DEPARTMENT OF TRANSPORTATION
ESTIMATED DATE OF CLOSURE: JUNE, 2006

PROPOSAL: INSTALL TEMPORARY MILITARY PONTOON BRIDGE AS TRAINING
EXERCISE FOR HOOD CANAL

8.1

The proposed closure of the principle transportation link between the Kitsap and Olympic Peninsula will have significant impacts to the residents and business of both communities. The current average daily traffic across the Hood Canal Bridge is 16,000 vehicles. With the proposed detour of 42 to 74 miles, this represents a cost to the general population of **\$315,520 PER DAY**. This cost has not been addressed adequately by the SEPA document.

8 week

\$17,669,120.0

8.2


It is hereby suggested a **TEMPORARY MILITARY STYLE BRIDGE** should be constructed between the old ferry terminal points 1/3 mile to the southwest of the existing Hood Canal Bridge at the Lofall Point to South Point landings. This route is still shown on the USGS quadrangle map "LOFALL".

This military construction would serve as a training exercise for the Corp of Engineers and provide an immense benefit to the Olympic communities.

Certainly, if a major disaster had occurred on the Olympic Peninsula such as a hurricane or extreme Arctic Blast, the Federal Emergency Management Agency would come forth and expend extensive amounts of money to provide relief to the area and to restore transportation. In anticipation of the severe hardship that will occur by the closure of the Hood Canal Bridge, a definitive plan that would address this transportation emergency would be appropriate.

Please enter my objection to the SEPA document.

Very truly,


Michael J. Anderson
PE & PLS No. 27665
330 Cleveland Street
Port Townsend, WA 98368

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- 8.1** This mitigation proposal is outside the scope of this project.
- 8.2** It is not possible to construct this type of span over Hood Canal. The spans are too long, the water is too deep and the wind/wave/tidal loads are too great for a temporary bridge that is intended to carry the traveling public. In addition this type of bridge would have no means of opening to allow navigation.

